REPORT RESUMES

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CONFERENCE PROCEEDINGS, CONFERENCE AND INSTITUTE DIVISION, NATIONAL UNIVERSITY EXTENSION ASSOCIATION (PURDUE UNIVERSITY, APRIL 23-27, 1965).

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IN APRIL 1965 AT THE PRECONFERENCE WORKSHOP OF THE C AND I (CONFERENCES AND INSTITUTES) DIVISION OF THE NATIONAL UNIVERSITY EXTENSION ASSOCIATION, WILBERT MCKEACHIE DEALT WITH CONFEREES' QUESTIONS RELATED TO LEARNING PROBLEMS TO BE CONSIDERED IN PLANNING CONFERENCES AND INSTITUTES. MCKEACHIE BROUGHT OUT THREE MAJOR PRINCIPLES--(1) LEARNING IS ALWAYS GOING ON, SO THE PROBLEM IS TO PLAN WHAT KINDS OF LEARNING WILL OCCUR, (2) DIFFERENT KINDS OF LEARNING DO NOT ALWAYS GO TOGETHER, SO CHOICES MUST BE WEIGHED AGAINST WHAT IS FORECLOSED, AND (3) FEEDBACK FACILITATES LEARNING. AT THE MAIN CONFERENCE, FRANK WOERDEHOFF DISCUSSED PRINCIPLES TO OBSERVE IN DEVISING A TRAINING PROGRAM AND SUGGESTED HOW TO BUILD A CURRICULUM FOR TRAINING NEW C AND I PERSONNEL. THE PRINCIPLES WERE (1) TO MAKE TRAINING OBJECTIVES MEET THE CRITERIA OF SOCIAL ADEQUACY, NEEDS, ADULT EDUCATIONAL IDEAS, AND BEHAVIORISTIC INTERPRETATION, (2) SELECT CONTENT SIGNIFICANT TO THE FIELD OF THE CONFERENCE AND INTERESTING AND CONTRIBUTORY TO GROWTH AND DEVELOPMENT, AND (3) LOGICALLY AND PSYCHOLOGICALLY ORDER CONTENT IN TERMS OF SCOPE AND SEQUENCE. HIS RECOMMENDATIONS INCLUDED THE ORGANIZATIONS OF A COMMITTEE FOR PROFESSIONAL STANDARDS AND TRAINING AND DEVELOPMENT OF A NATIONAL TRAINING PROGRAM. C AND I DIVISION ROSTER IS APPENDED. (RT)

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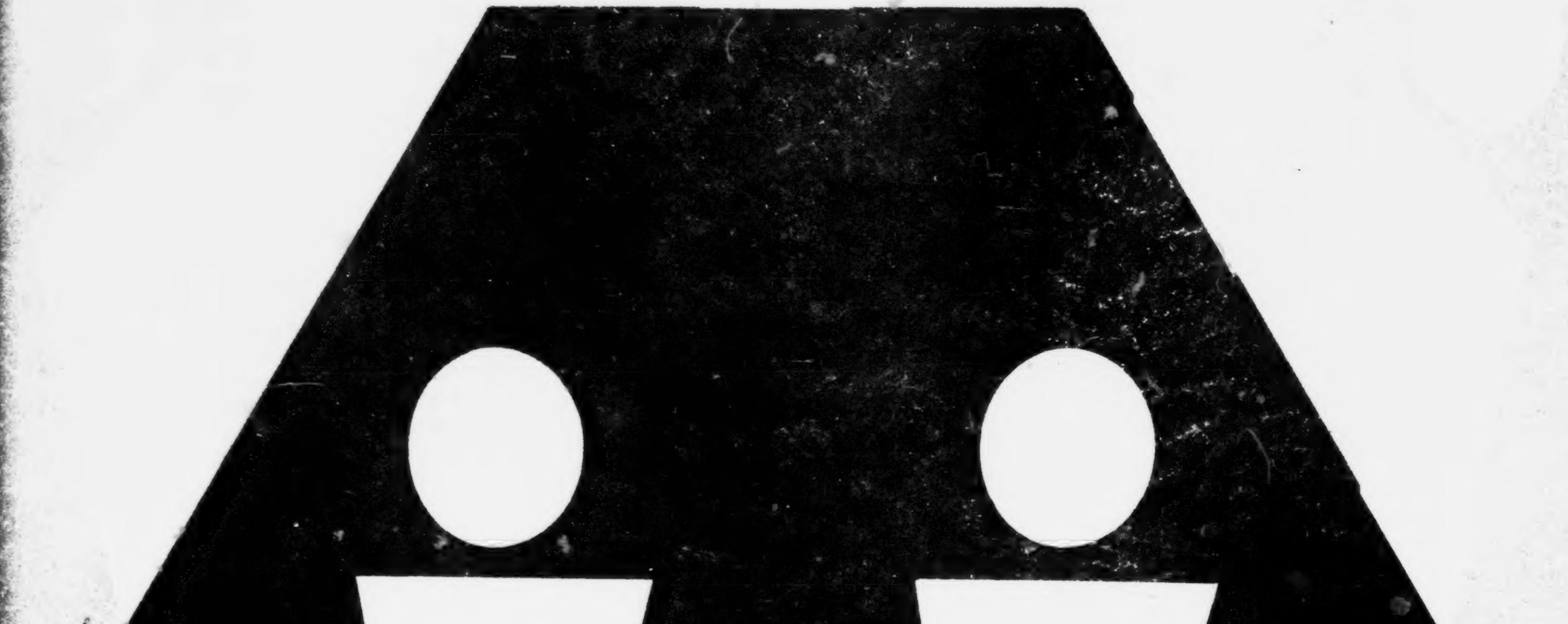

National University Extension Association

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UNIVERSITY EXTENSION DIVISION

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"Message from the Chairman"

The C & I Division of the NUEA had a very successful and satisfying year. The highlight of the year's activity was the pre-conference workshop and divisional meeting held at Purdue University April 23-28. Over 100 persons attended the conference this year and all agreed it was most challenging.

It is with pride that I send you the proceeding from this meeting. For those of you that attended the workshop I hope they will refresh your memory as to our discussions and recommendations. For those who were unable to be in Purdue, I hope they will serve as an inspiration to continue this never ending journey into the "Learning Process".

On behalf of the C & I Division I wish to express my appreciation to the members of the executive committee for their untiring efforts throughout the past year. My personal thanks go to all of you for making my job as chairman a very pleasant task.

EW Jenusaitis

E. W. Jenusaitis
Chairman 1964-65

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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CONFERENCE PROCEEDINGS

CONFERENCE AND INSTITUTE DIVISION
NATIONAL UNIVERSITY EXTENSION ASSOCIATION

PURDUE UNIVERSITY
April 23 to 27, 1965

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PRECONFERENCE WORKSHOP

THE LEARNING PROCESS
AS APPLIED TO SHORT-TERM LEARNING SITUATIONS

SPEAKER: Wilbert N. McKeachie
Professor and Chairman, Department of Psychology
University of Michigan

CHAIRMAN: James Lahr
Washington University

Conference and Institute Division
National University Extension Association

N.U.E.A. Pre-Conference Workshop
Purdue University

Lahr: The planning committee, in considering the topic for this year's workshop, took into consideration the previous workshops that have been conducted for the past 6 years. Those of you who have been coming regularly will remember that back in 1959 the first pre-conference workshop was held at Syracuse; and at that time we talked about the general theme of The Conference As Education. Then the next year we went out to Chicago and in 1960 talked about The C & I Man As An Educator. In '61 we traveled to Santa Barbara and there our emphasis was upon evaluation as it related to Educational Planning. At Nebraska in 1962 we discussed criteria for Program Planning. In Minnesota in '63 there were certain unique Instructional Factors of the Conference Situation that we talked about and discussed. Then last year at Maryland we had the very fine workshop, you'll recall, on the Professional Development of the C & I Man. And one of our speakers there, you'll recall was Larry Nelson from Purdue. And looking closer at what Larry had to tell us, we found that training was an essential aspect of one's professional development in any profession, particularly the C & I profession.

So, we've taken this area of training and built around this the framework for the pre-conference workshop, which will actually continue (this year) into the regular division meetings that we'll have on Monday and Tuesday.

They think there are three audiences, actually, that come to these N.U.E.A. programs: those that come only for the workshop session, the pre-conference workshop; those that come only for the N.U.E.A. conference, and then those that attend both. And in order to give this some continuity, carry over from the workshop to the divisional meetings, we have this time integrated the entire program so that those of you who are here today can take advantage of the continuous program all the way through Tuesday to develop a training program for C and I people, which, hopefully, will be started in various regions through the country this fall, where those of you who are having new conference people, those of you who are conference people, those of you who are conference people and who are directors of the programs at your university, may want to send your people (or come yourself) to these programs that get started.

In thinking about the workshop for today, we wanted to integrate these two portions. There has always been a division between the workshop and the divisional meeting; so what we want to do here is to take a closer look, go into depth into the learning process, and what motivates adults to learn. Are there certain characteristics here of learning that differ, from the adult person who may be in a regular semester length class as differs from the persons who participate in a short-term experience, a conference, or a short course.

As professional people, as directors of programs at your university, the learning of the people that attend your programs is vitally important. And if we can learn ourselves, here these next four days, some of the things that will enable us to create programs that will enable those visiting our universities to learn more from their experience, this is what we want to do. And from this framework, (as you look at your pink program), we want to build a training program to carry on the C and I work.

I think we'll go into some more explanation of the pink program a little bit later when we get ready to break into groups. I think that will be the appropriate time to give you the organizational structures, perhaps, as to where you go, who your leaders will be, etc. (Those of you who are on the back row, I think now is an excellent time to move up here into these seats because you're going to be doing some writing, you'll want a desk on which to do it. There are more seats here.)

And at this time I would like to introduce Dr. Al Storey who is the assistant director at the University of Michigan, Extension Services, who in turn will introduce our speaker for this afternoon. Dr. Storey.

Storey: I think we'd all agree that if you find it warm (and the anti-freeze isn't out of the air conditioning yet), feel free to hang your coats on the back of your chairs. And I have one comment on Ed Jenusaitis's remarks, alluding to no white spaces on the pink sheets. He just wouldn't permit anything by way of recreation to happen at this conference. That's why the white spaces aren't there.

It's a distinct privilege for me to introduce Bill McKeachie to you. I have cut the remarks in three parts, and I'm going to deal with only the third part, because we have so many people introducing one another here, and we want to get at what Bill can say to us and do with us in this workshop.

I've known Dr. McKeachie for some 19 years. We met at a time when we both came to the University of Michigan -- in different purposes at the time, and different levels of duty and responsibility. And I would like to introduce him to you as one who keeps up with what we consider (most of us) the traditions in higher education: of the man who can be the teacher, the scholar, and the researcher. And I want to append a fourth item, and I'll do that at the last.

Let me only identify him as a Michigan product, in that he was born in Michigan , did some school work, graduated from Eastern Michigan University in Ypailanti, and earned his Ph.D. at the University of Michigan in the area of psychology.

Let me identify that he taught in the Upper Peninsula of Michigan and has been at the University, returning from a tour of duty in the Navy (in the Pacific area) --returning from there in 1946.

Now in his role as chairman of, I believe, the largest Department of Psychology in the country, he has, I think, a real task to demonstrate this role of being a scholar, researcher, a teacher-researcher, and administrator. The administration aspect is brought home to some of us rather clearly when we look at his department and see the relationships with a Research Center for Group Dynamics, Survey Research Center and the psychologists with the various roles they play on our campus. Some of us also like to kid him and would be willing to put him up against some others for the most frequent trips to Washington and other cities in the country in a given year, in his role as a member of administrative committees.

In his role as scholar, researcher, we could identify more than 100 articles and books that he has written and co-authored, as well.

In the role of teacher, I would identify that so far as I know of his professional life, this is one of his main interests, and he lectures across the United States continuously, to college audiences, faculty members; has conducted seminars of programs in which he has been keenly interested in the teaching of the student, whether college age, the older post-graduate student, whether in adult education -- whatever it may be.

The fourth point I would make, that he has, in addition to these, is that of being an athlete. His department can boast the most trophies of any in the university for intramural soft-ball and volleyball. He can boast a period of some 15 years (this summer) of being the pitcher for the best softball team, out of some 16 teams in the university.

I'm very pleased, Bill, to present to you this audience of people whom I've known for 4 or 5 years, and feel represent a very active integral part of our area of adult education and higher education. And ladies, and gentlemen, I'm pleased to present my friend to you, Bill McKeachie.

McKeachie: Al forgot to tell you that the reason the psychology department wins the faculty championships regularly is that we are active recruiters, including among the Extension Service, Al (who's played with us for 15 years) and Clint Gessner (who's been playing with us for the last 3 years.) So-fortunately we don't have any Big Ten rules in recruiting for faculty teams. We're able to go out beyond our own department for star players.

In a group of this sort my task, as I see it, is complicated by a lack of immediate familiarity with the problems which people, actively engaged, face; and I've been pleased in the general structure of the program in which information will be alternated with discussion. But I would like to go even one step further and be sure that the information I start out with has some relevance to the problems which you face; and thus, before trying to review some of the principles of learning, which you might have picked up from the assignments which you were given before coming, I'd like to get a list of some problems that come to your mind as you think about the learning tasks which you encounter in planning conferences and institutes. So, I'm going to use the technique that my colleague, Norm Meyer, calls problem posting, which is simply to gather from a group of people the questions which come to them; and I'll try to select from the principles I've listed for possible presentations, those which seem to be relevant. I hope that I'll, by doing so, awaken still further questions, which can be brought out in the discussions following my presentation; and then we'll come back for another round tonight, to try to go a little more deeply.

So, stop to think for a couple of minutes about what sorts of learning problems you see in your job, and then let me hear them and I'll put them on the blackboard.

Questions presented by conferees, and in some cases restated by Dr. McKeachie.

McKeachie: 1) (Restating question) How long does it take to get sort of warmed up to learning?

I presume he is implying that no learning has taken place so far this afternoon.

Any other questions?

Conferee: 2) By this orientation of the people who are coming to learn, I'm getting more and more concerned about orientation of the people who are coming to teach.

McKeachie: OK. Will you expand a little bit on that?

Conferee: Well, your groups differ, and how are you going to tell your own faculty people, who are going to help you out, and your other resource people, something of the background of the potential learning abilities or capabilities, the backgrounds, of your conferees?

McKeachie: Well, I hadn't thought of it. That's interesting.

Other questions?

Conferee: 3) What kind of involvement must you have for learning to take place?

McKeachie: What do you mean by involvement here?

Conferee: Participation. You need active participation, active

Another
Conferee: 4) What are the motivational factors for learning in situations such as this?

McKeachie: OK. What were you thinking of here in terms of motivational factors?

Conferee: I think there are physical factors that we have to consider, such as lighting, heating, arrangements, along with their reasons for being there.

McKeachie: Other questions?

Conferee: 5) What evaluation methods are available to us to detemine if and when it is taking place?

McKeachie: OK. How to measure whether or not learning is taking place -- that's the question? Any others?

Conferee: 6) Are there peaks and valleys in the learning process?

McKeachie: That's an interesting question. There's a little evidence on that too, I think.

I'm going to repeat that; I understand this is being recorded. (Question restated by McKeachie) Are there peaks or valleys in learning.

Conferee: And when do they occur, or when are they most likely to occur?

McKeachie: Ah, that one I probably can't answer. The question is: When do peaks and valleys occur?

Any other questions?

Conferee: 7) Is there a difference in the learning process on a short time basis as opposed to the so-called long time learning -- is there actually a difference in learning techniques?

McKeachie: (Restating question) Is there a difference between short-term learning and longer term? This would be -- you mean a one-day conference as compared with a semester course, or something of this sort?

Conferee: Is there an actual difference in the learning process itself?

McKeachie: Uh hum. It's interesting that this is one of the hot questions with learning theorists today, whether there's a difference in short term and long term memory. But when we're talking about short term, we're talking about memory over a period of a minute to 10 minutes perhaps, as contrasted to something longer, so your question is a different one.

I've been thinking about this a good deal because the original program for this suggested that tomorrow I concentrate on short-term; and I am not sure there is any difference.

Conferee: 8) Are certain kinds of content better learned over given periods of time. It sort of goes along with the other?

McKeachie: (Restating) Is certain kinds of content appropriate for short term learning experience and other kinds for longer term? Is that it?

Conferee: 9) What are the factors in a residential setting to promote or inhibit learning?

McKeachie: By residential setting do you mean something like this, where the conferees are staying over a night? (Restating) Factors in residential setting.

Conferee: 10) Is age an improtant factor?

McKeachie: Importance of age in learning.

I can say it is, but there's more to it than that, I guess.

Another
Conferee: 11) Several of your questioners have referred to process of learning. I would be interested to know if there is a process, and what its elements are.

McKeachie: Uhm. Is there a process of learning? What do you mean? I'm not sure what you mean -- maybe I'm not sure what other people have meant when they used the term. What do you have in mind, as process?

Conferee: It confused me that people who used the term implied that, you know, there are stages of learning. I don't understand the idea.

McKeachie: OK, I'll tackle it -- or try to anyway.

Conferee: 12) The question of how to evaluate has bothered a lot of us for a long time. I wonder if maybe a second thought to that question is when to evaluate.

McKeachie: When should you evaluate? -- that's a good point.

Any others?

Conferee: 13) What implication does use and disuse have in program coordination and program development?

McKeachie: What do you mean by use and disuse here?

Conferee: That is, practice, continuing in educational programs --whether that

McKeachie: So this is sort of, what happens following the conference or institute or something?

Conferee: And before.

McKeachie: (I guess I'm running out of space.) Any others?

Conferee: 14) What role does re-enforcement play in the education process, and what are some of the methods that re-enforce it?

McKeachie: (Restating) The role of re-enforcement. Well, just using the term implies that you've had some psychology, I guess.

Any other question? Well, I'll tackle some of these.

I think I'd like to start at least, with that one -- probably to some extent that one, -- well, that's probably enough to start with, and I'll kind of go on.

Essentially this question of how long before learning begins implies, I think, a conception of learning as being something that happens only under certain special conditions. It implies that one is learning only when he's really focusing on an educational experience. To some extent this notion, what kind of involvement is necessary for learning implies the same thing, that perhaps learning doesn't take place unless people are really straining to get something. And I would propose as the first principle~~s~~, the principle that learning is going on all the time, and that thus there isn't any lag between arrival at the conference and learning, that every moment you're awake you're learning, and that thus, the problem of planning an educational conference or institute is not one of planning whether or not learning will take place, but rather planning what kind of learning will take place.

All of your participants in the conference are going to learn something while they are there. They may learn where the nearest bar is; they may learn that your university is a terrible place or they may learn that it's a very good place; they may learn the names of other participants, as probably we already have to some extent today; they may learn something about geographical location of various rooms and buildings, etc. But all of the time you're learning. You may be learning right now that McKeachie is a boring speaker, but undoubtedly, at this point, you already have formed certain impressions of me, certain impressions of the people around you. You've begun to develop certain motives. One of the purposes of this sort of technique, presumably, is to start you off with questions so that you have some sort of motivation to get answers to these questions, and so that you're directed toward the sort of information which I shall try to present. And if this has been successful then, in a sense this has been a learning experience, in creating motives which didn't exist, at least as clearly, when you came into the room. So, the answer to this question really is Ques.: How long before learning begins zero. It begins right away.

I think that the question -- I'm really stretching this a little bit, because the question undoubtedly implies; essentially, how long before the sort of learning that we're trying to bring about, begins taking place? And this is something that we can tackle experimentally, and we do know that there is a certain warm-up period in most learning experiences, that one of the reasons we have introductions and maybe funny stories at the beginning of the speech, etc. is to kind of focus attention, to remove the person from the sort of things that he _has_ been thinking about and begin to direct his thoughts toward the area which you want to present.

One of my colleagues, Jack Atkinson, whom I'll probably quote frequently, has the notion that in human behavior, as in physics, there is a law of inertia. And that even though our old psychological theories sort of took the position that the person is here, a stimulus comes along and he responds to it -- that this is a very oversimplified view, that we aren't just sitting around waiting for stimuli to come to start us off, that always there's something else going on, and that thus, when we start a new activity (like a conference) our problem is partly: how do we take this inertia that has been built up through having lunch, talking to other people about other things, the problems of everyday life, and begin to change the direction from the direction it was going in to the direction we want it to go in. And this, presumably, according to Atkinson's theory -- and I think just according to common sense -- depends on how involved a person was in other activities before this. In other words, you can't really answer this question in the abstract, because it depends upon what was going on before the new activity began. And if you're competing with something which was very vital to the person, which he was very much wrapped up in, then it's going to take a good while before you can kind of get him away from that and get him focused on the educational experience that you want to take place. If, on the other hand, he _has_ been sort of oriented to the conference, he's coming to the conference with an expectation of certain kinds of learning taking place, why then you may have a certain inertia built up that's with you rather than against you, and you can start right off using this motivation which he brings to the conference with him.

Well, does that answer that question to some extent at least?

Now, the question that I'd like to turn to next, I think, is probably this question of -- well, I think I'd better go on to this process thing, as I want to get involvement in connection with the motivation thing later, this question of: What is the process of learning? -- because essentially what I've been saying, I'm implying, a certain process when I say that learning is going on all the time. And the sort of explanation which I use is not one which would be used by all learning theorists. In fact, I've just completed a textbook which has been going out to various people around the country for reading, to get criticisms back, to be revised for publication, and I have a chapter which is kind of my theoretical approach to the topic. And I find that about half the readers say this is terrible; it's not even college level; no college student should even be allowed to read this sort of thing; it's very unsophisticated. About half the readers say: This is a very sophisticated approach. I'm glad to see this getting into an elementary textbook; and this is going to be a best seller textbook. Well, so this is just a way of warning that you'll find a great many psychologists who wouldn't agree with the sort of approach I use in talking about learning.

But essentially, my way of looking at learning is what's called an expectancy approach, that the process of learning is one which is simply an association of things which have succeeded one another; and that we learn, for example, a percept of a table, and we do this largely on the basis of repeated experiences in which you see something that's rectangular on top, typically, and has legs holding it up, people write on it, and these sorts of things which go together, where when you see one part of a table, you also see other parts, typically -- this building up of kind of expectancies of what things go with what is the basic way that I look at learning. It's simply a matter of repeated experiences; we tend to build up the expectation that if you see a car approaching that you should hear some sounds before long from the motor and from the other aspects of the car which are going to create sounds. You build up expectations that if you see certain features of a person, (maybe you catch him from the side), that as he comes closer you'll pick out other features, which you've learned also accompany these cues that you pick up from the distance. Essentially all of the time we're responding to the environment in terms of probabilities, that we pick up partial information from the environment and then on the basis of this information we make estimates about what the world is really like that is there, beyond these immediate things that we're picking up at any one moment. And we check this. It may turn out that sometimes we think we recognize someone -- it turns out to be a stranger. This would presumable weaken the expectancy that the next time we see the same thing, that we recognize it as being Al Storey, or a particular person. But if, time after time, when we see certain things, and it's turned out to be Al Storey, then presumably it takes less and less information for us to recognize Al Storey in the future. That is, we can make the generalization more rapidly. So, my notion of the process of learning is that it's simply: getting some information in (through the eyes or the ears or the senses), extrapolating on the basis of that information, having expectancy about what goes along with that, so that we get a percept or a concept of something associated with this information, getting in more information, and if its a new situation we get some more information by going up closer and looking more carefully, or by feeling. or by talking to the person and asking him something; and checking then this first guess about the situation with this additional information, and then on and on continuously. So, my conception of learning is that it's basically a very simple process.

Now, this doesn't mean that there aren't a lot of complications that get in the way of any particular kind of learning, but this would be the sort of process that I have in mind, the way in which we build up these expectancies about the world around us.

Well, let's turn then to this question of What's the Role of Re-enforcement in Learning; and the related question of What's the Role of Involvement in Learning? Re-enforcement is usally used in psychology to refer to a situation in which a need is satisfied; in other words, when a person gets rewarded or punished. And an increase in drive level or motivation or a decrease in drive level or motivation has traditionally been called a re-enforcer, something which affects the person's satisfaction or lack of satisfaction in the situation.

Now, I'd prefer not to use the term re-enforcement, because I think that it includes some things which need to be separated. I think that when we talk about re-enforcement - sure, there's an impirical law that if something is re-enforced it's likely to be remembered better and if you want something -- you want somebody to learn something, the best way to go about it is to reward him for learning it, and then he'll remember it, and when you try it again the next time and you reward him again and before long he's got it down par. I think that this is over simplified in that re-enforcement typically has two components and that under certain circumstances you can separate these out.

One of these components is information, the re-enforcement usually gives the person information about whether he has done right or wrong in the situation. We send a rat down a T-maze. A T-maze is just something like this, where the rat starts here and goes out to this point, and then he has to learn either to turn left or right, depending upon what kind of cues we put in the maze. We might color one of these alleys black and the other one white, and he has to learn always to go to the black one. Or we might make it so that he always had to turn left to get through, or we can put in some fancier sort of things for him to look at to determine which way to turn. Let's say that we're trying to train him to go left. So, we put food over here, and every time he turns left he gets food. My argument is that in getting food here, he's gotten two things. He has gotten his hunger satisfied; and this is an important part of re-enforcement. He's not as hungry after he's gotten to that box, than if he'd gone to the other box, which is empty, over on this side. But I think the more important part of this is that he has learned that when you turn left, you get to the box that food is in; whether he ate the food or not, that he has learned that the left-turning leads to the box with food in it; and that eating the food should be separated from finding out that the food is there, the informational part of re-enforcement. And for most human learning, I think the actual -- the re-enforcement is important in terms of affecting the person's future motivation, but that for his learning the informational part, what he needs is this -- what I call -- feedback, the information that certain things go together, and that turning left leads to food, that learning goes on all the time, that I don't need to pat you on the head or feed you a candybar, or something, for you to remember the particular concept of learning that I'm supplying, that simply the information itself can be a feedback, and that if you were to write this down and then ask me to look at it, and say this is right -- just knowing that it was right would be enough, even if you didn't care whether you were right or wrong. You'd still learn something about it from the informational feedback.

Now, this doesn't mean that you need to neglect the reward part. I think that there is a very real question here as to what sorts of ways you want to try to use re-enforcements in learning situations in conferences, and institutes. But I'm separating this because I think that it is quite important that you deferentiate different kinds of learning. I think its the sort of problem that maybe is involved in this question, although it's a little different, perhaps, than the question I had in mind.

What I'm saying is that a second important principle of learning is that different kinds of learning don't inevitably go together, and that methods of achieving one kind of learning may not be effective for achieving other kinds of learning. Thus, you have to specify what the objectives of your educational experience are, and you often have to make a trade-off. You can't have your cake and eat it too in lots of educational situations.

Take, for instance, this question of information vs. reward re-enforcement in the reward sense. We know, for example, that in most situations -- well, I think we'll make this as a generalization -- that the more mistakes you make, the worse off you are as far as learning is concerned. If you want a person to learn something rapidly, the thing to do is to make sure that he never makes any mistakes in learning it. And so we have teaching machine programs, for example, in which the person learns something step by step, and the program is designed so that each step is just a tiny bit harder than the previous one, so little that the student very rarely makes a mistake. In fact, the Skinnerians, who popularized the teaching machine movement, have generally laid down, as a rule, that a program is poor if there are more than 10% mistakes. So, this would mean the typical student would go along for 10 questions -- 9 questions anyway, before he would be making a mistake, on the average.

Well, this is good, as far as learning is concerned. In fact we know that rather than asking the student a question, that he'll learn more rapidly if you tell him the answer before he's had a chance to answer it and make a mistake himself; that it isn't good to ask him a question, because he might give you the wrong answer and this is going to interfere with his remembering it. So, it's better just to print out what you want him to know, rather than ask him a question, because that way you can be sure he gets the right thing from the beginning. So, as far as information is concerned, you want to be sure that everything goes right, that the person makes no mistakes, that things are laid out for him very carefully so that one thing follows another in a very orderly fashion.

But as far as motivation goes, I think you have quite a different picture. And I have argued with Skinner and others now for 10 years that teaching machine programs, which they get developed to the point where everybody answers every question perfectly will be fine, but nobody will stick with them for more than an hour or two because they'll get so bored with them. I'm not sure that I have any evidence to support this yet, as far as the teaching machine programs are concerned, and Skinner wouldn't agree with me anyway. So far, fortunately, nobody can write programs that everybody gets right all the way through, so we don't have any perfect tests of this yet. But as far as motivation is concerned, there is some evidence that uncertainty, not knowing whether you're going to get it right or wrong, is effective for motivation.

Jack Atkinson, whom I've quoted before, has worked a good deal with need for achievement, the motive of people to want to be successful, to do well in competitive tasks, or in tasks where there are standards of achievement. He has shown that the person who is high in need for achievement, who has a strong need for success, will, when he's given a -- say, a dart throwing task and there's this dart game up on the wall with a bull's eye and various circles to throw the darts at; and he's told: You can stand any distance you want to from this board, and we'll keep score. You can try the game and we'll keep score for different people. Each person can choose the distance he wants to stand from the dart board. People, who are high in need for achievement, tend to pick moderate distances, distances where they can be successful part of the time, but where they are not invariably putting the dart into the dartboard.

Now, there's another group of people whom Atkinson has been interested in, people who fear failure, who also are very much concerned about success, but who, rather than having an expectation in competitive situations where they are pepped up about it and they're confident that they're going to go through, -- these people tend also to get motivated by competitive or situations where there are standards of achievement, but to have great feelings that they're going to fail, and a great sense that this is a threatening situation, and they become very anxious about it. These people too, in the dart board situation, show certain patterns of selection of distances. In this case they stand either very close to the dart board, where they can be sure

that everyone goes into the bull's eye, or else, strangely enough, they stand way back -- a long ways away from the dartboard. Now, what does this indicate about their motivation. Well, Atkinson would say that, again, these people are most motivated in a situation where their probabilities of success are about 50-50, but in this case it's a negative motivation; that is, if their standing in this intermediate area, where the hope-of-success people stand,they are tremendously anxious. They're not sure whether they're going to hit the bull's eye or not and they get very anxious, and so they avoid these intermediate distances and they get out, either so close that they can be sure of success, and thus they don't have to be anxious, or they get so far away that they can be pretty sure they are going to fail and nobody can blame them for failing. After all, who can blame me if I don't hit the bull's eye when I'm standing back there twice as far as anybody else does. And so we have these fear-of-failure people who set impossible tasks for themselves to avoid the threat of failing at a reasonable task.
So, Atkinson's stuff would suggest that you get this maximum level of motivation in a situation where there is uncertainty, where there is a reasonable probability of success.

Now, what does this have to do with learning experiences? Well, Beloin, at the University of Toronto, has been interested in studying children's learning in situations where you ask children questions. He's been interested in what kinds of questions stimulate children to learn. His research suggests that you don't get students motivated for learning best by asking them very simple questions. You don't get them motivated for learning by asking them extremely difficult questions, but the questions which seem to be most motivational, in terms of the student's wanting to study more, are questions which are these intermediate ones. He finds, incidentally, that ones that are particularly good are ones which make something seem more uncertain, which the child has been pretty certain of before, the sort of Devils advocate type question, where you kind of shake up something that he's taken for granted before and put it in a new light.

So, here I'm suggesting that it's important to differentiate, then, your goals of learning motives and developing motivation for something, from your motives for learning information. That for learning information you want a situation where the person can be confident of success, where he has no opportunity to make mistakes. That for developing motivation, on the other hand, you want a situation where you present him with something that makes it a little more uncertain, where he can't be quite so sure of success, where he doesn't know the answer in advance, where a problem is posed, And we've got other evidence along the same line. Dave Burch of our staff has been studying motivation, intrinsic motivation, in rats -- curiosity. He shows that rats, like human beings apparently, are motivated for novelty; that a rat, if you keep track of where he spends time in a new environment, will spend more time in a little alley where you put in a block with a checkerboard design or where you've changed the walls so that the walls have some different stimuli -- he'll go into this and he'll spend a good deal of time. There seems to be a growing amount of evidence that curiosity is just as basic a motivation as fear, hunger, sex, and the ones that we've taken for granted for hundreds of years, and that there is a very subtle relationship between curiosity and fear; that when an organism is presented with something which is very strange, very different from anything he's seen before, his first reaction is one of anxiety and fear. The chimpanzees, for example, down in Menlo

Park, Florida, in the primate laboratories there, become very disturbed if a keeper comes in wearing a mask, a Halloween mask, and they become afraid and anxious. And similarly, when you put an animal in a strange situation, his first reaction is kind of to shrink back. If there is a corner handy he'll shrink back into a corner.

But what happens in this situation is tht we gradually adapt to strange things. Carl Brown, who was formerly professor on our staff, (retired a few years ago), back in the thirties, took a squirrel out into the middle of the Michigan stadium, and then turned the squirrel loose in the middle of the stadium. What did the squirrel do? Well, first he just kind of froze there, and showed (if you could read his mind) signs of fear. And Carl probably wouldn't read in fear, but at least he tended to be relatively rigid. But then gradually the squirrel would go out and he'd come back to the spot again where he started, and go out a little further, come back again, go out a little further, come back again. And eventually, he'd explored the whole stadium -- at least as long as Carl left him there.

Well, to some extent we think that this is typical of the way all organisms (Humans and others) react to new situations, that we're always seeking something that's a little different, that's a little novel, that is new. But then we come back to the familiar and then go out and bring in a little more novelty, come back, go out and get a little more novelty, And the trick in motivating people in learning situations is to kind of keep the right balance of the familiar with the novel. Now this means that probably for some people, you're going to make them anxious, and they're going to feel unsettled and uncertain, and that for other people it may be too much the same so they'll be a little bit bored. So, you may have to provide differing degrees of complexity for differing parts of your participant audience. But the general notion thay you can rely on uncertainty, newness, and complexity of the situation to elicit motivation, I think now is becoming fairly well established in psychology.

Well, I guess my time is really up already. Let me just tick off a couple of comments about each of these questions as I'm not going to have time to go over them all.

The orienting of resource people to groups -- I think again is this notion of setting goals, and I guess I'm anticipating what I'd planned to say tomorrow by saying that it seems to me the big difference between short term and long term learning is simply in the sort of goals that you set for your learning experience; that the process, as I conceive of it, is the same in both cases. The difference is that if you're working with a person 45 hours, you can set goals which are much more advanced, more long-range, than you can for something where you're working them only 8 or 10 or 20 hours. And that, this question of orienting people is essentially one of getting them to set goals that are reasonable for the length of time that you have to work with people. I'd suggest also that one of the differences between the short term situation and the semester-long learning situation is that in a short time learning situation, you probably cannot go very far in terms of creating brand new motives for the people. That is, one of the things I try to get across to our teaching fellows at the University is that you don't have to be satisfied with the motives students bring in. They come into a psychology course wanting to learn how to win friends and influence people, and this is fine. We can recognize this and maybe work with it, but we can create new motives, curiosity about human behavior in general, motivations to explore it scientifically etc. and over a semester we have a chance to make some progress in developing these other kinds of motives which we think are going to be important for their future learning. I think in a short term course, I'd be more skeptical about how much new motivation we could develop and I'd be much concerned about the motives people bring in, that we can capitalize on right now, and that this would be the thing I would stress in trying to orient resource people as to kind of give them a picture of where the audience is, what they're expecting so that you can kind of take off from the beginning with what the person can use.

Well, the kind of involvement that is necessary, essentially that question I have dealt with by saying that you're going to learn whether you are involved or not. There are some motivational factors which are important here, and I guess I'd better save that till later, because that gets to be more complicated.

I've talked a little bit about motivational factors; I guess the one big principle I would stress is to count upon native curiosity, that this is a much more important motive than we use to think was true, and I think is probably particularly important for the sort of people who are coming to a conference for a learning experience. You really aren't dealing with a population where you've got to cope with a great lack of curiosity. Maybe this depends upon the conference, but anyway I would plug for curiosity as one of these motives you want to be concerned about.

Effective use or disuse -- well, I guess there I'd just say as a starter that the more it can be used, the more likely it is to be retained. I've talked a little bit about re-enforcement.

Evaluation -- I think I'd better save that for later. That's a long term problem too. There are peaks and valleys. And when depends a great deal upon motivation, so that one can't really be answered very much. The notion would be that some people get bored relatively quickly and so you've got to provide new stimuli or a change of pace; while if there's very high levels of motivation, people can operate a sustained level for fairly long periods of time, more than you're likely to be concerned with. We've had subjects, for example, who've worked on problems all night, (straight through the afternoon and the following night) without any great loss in learning. They seem to be able to sustain it for a long time.

Short term - long term learning I've commented on a little bit. I think in terms of certain kinds of content, all I'd say here is that there are differences between learning motives and learning information, and that probably it's easier to learn information in a short term, but on the other hand I think you've got to focus on motivation if you're going to have any very long term effects, because one of the things you've got to do is to create something that will continue for awhile after you get out. So, we'd probably better talk about that longer also.

I think that's one of the things in the residential setting, that this may imply using out-of-conference time as a way of kind of reenforcing learning and motivation, if you get your groups talking about what's going on, and making plans as to how they can apply it.

Age and learning. I guess the one principle I'd say there is that we used to think learning dropped off very rapidly after about 24 or so. Now, the general feeling is that the older you are the better you learn. So, -- and I think this means that, until people get senile, you don't have too much to worry about as far as teaching is concerned. There is a gimmick here, and this is the reason why the earlier research went wrong; that the older you are the better you learn, providing the new learning fits in with what you've known before, that is, so you don't have to change or forget something that you've already learned. The older you are the better you've learned what you have at this particular time, and the harder it is to change it. And this means that if you're trying to teach someone something that's in contradiction to what he's always known, it's going to be much harder if he's older. This may mean, then, that in planning conferences for older people, that you make a much greater effort to start off with things they're familiar with and to try to relate what you're doing to the familiar things that they already know.

I guess I'd better turn it back to Ed.

Would you just comment a little bit more on the physical factors. How important are they to the actual learning process?

McKeachie: I don't think they are, except insofar as they affect this general notion that you essentially are always learning, and if the physical factors are very distracting, what you're learning about is how uncomfortable the rooms here are, or something of this sort, instead of learning what you should be learning. Or, if you look at motivation, for example, curiosity (I'd say) is a very strong motive, but it probably can't compete with hunger, when hunger is intense, or with uncomfortableness when you're too hot or too cold or something like this, And that, thus, when you get these other motives, competing with the motives for what you want, you're not going to accomplish the sort of learning you want in the situation. But, within a normal range, so that the person isn't actually uncomfortable, physical factors, I'd say, are relatively minor.

Chairman: Thank you, Dr. McKeachie. (Applause)

At this point, according to your program, we're going to break into three smaller groups, and to explore now, and to react to some of these principles that Dr. McKeachie has presented. These groups are determined, as it says here, if these principles can or do apply to the CNI situation.

McKeachie: But before you go -- I probably haven't left you with any clear picture of what the principles were. Let me kind of rum through the way I had it prepared as a summary so you've got a little different slant on these. I think I've introduced most of these principles already, but you may not have recognized them.

1. One principle is that the person's always learning, and that thus the problem is to plan what kinds of learning we want to take place.

2. The second principle would be that different kinds of learning don't necessarily go together, and that therefore it's important to specify objectives fairly specifically, and to use the techniques which are most effective for that particular kind of learning, Now, this may mean that sometimes you have to sacrifice information for interest, or that you have to sacrifice a certain kind of information-- or you may have to sacrifice a lot of information for ability to apply and use the information. These things simply don't necessarily all follow one after the other, and this means trying to make up your mind which is more important for this particular educational experience.

3. Third, that learning is facilitated by some sort of feed-back, or knowledge of results, And I've tried to differentiate. I've suggested that you need informational feed-back, that is, you need to know whether something is right or wrong. You have to have some sort of standard of accomplishment, in other words; and I think you can build these in so the person himself maybe can recognize whether he's right or wrong.

4. Fourthly, that motivation depends upon some sort of re-enforcement, and that you may increase learning by building in some

sort of reward, so that the person is motivated to go further. I've suggested that motivation does affect the kind of learning that takes place. Generally we learn those things which are going to satisfy our motives, and that curiosity c an be important motive.

I've suggested that curiosity depends upon a certain amount of newness, or uncertainty in a situation, but that information (or the other kind of learning) probably is most effective which there isn't anything that is uncertain, that is, when you're always right; so that here is one of the places where you have to usually compromise somewhat.

I think those are the major principles I've hit so far. There's probably -- I have more here, but I don't think you could remember more than this anyway.

Chairman: We have three group leaders in the audience. One of them for Group NO. 1 is Al Storey, whom you've already met; and that group will meet in Room 311, and we'll tell you which group you're in in just a moment.

The second leader is Tunis Dekker. And that group will meet in Room 313.

The third group leader is Mary Lou O'Donnell, and that group will stay right here.

Now, the way we'll determine whether you're in 1, 2 or 3, is a numbering off process. We'll start off by numbering 1, 2, 3, and then the next person is 1, etc.

(They number)

Now, remember your group number.

Now, before you go -- we'd like to have you work together. Your leader is to appoint, the first thing, a recorder; and the recorder for your session is responsible to put down those questions that you want to bring back tonight to Dr. McKeachie, for further elaboration on the principles that he's given to us, in relation to the short term of the CNI kind of experience. The group should work until about 4:30 and then we would like to have the leaders and the recorders to meet with Dr. McKeachie, Ed and myself in Ed's suite which is 556. And then remember the buffet is at 6 o'clock.

(Announcements, about the buffet and tickets.)

One further word to the leaders and recorders. We have suggested here on the pink program that they are to develop questions. We're going to ask that you develop at least 4 questions to bring back, and the recorders are instructed to write these legibly so that they may be turned in, to use in the proceedings later on. We want them written up at 7:30 so that Dr. McKeachie can use them and then turn them in for the proceedings that do follow.

(Announcements about breakfast)

We are adjourned.

McKeachie: I've talked about establishing goals. Let me try to describe my function, as I see it, and yours, as I see it; and to ask you to correct me if I've mis-interpreted these.

As I understand it, my task is to try to present principles of learning, or teaching; and your task is to try to see how these may be applied in conference and institute work.

There are some problems with this, in that, in the first place, the principles are not awfully well established; and while I may state quite dogmatically a principle like motivation that facilitates learning or something, if I were to go into it in detail the book which followed that statement would be largely qualifications and interpretations, etc. I think that psychology is better than common sense in many ways, but it doesn't allow one to get along without common sense. That is, we don't know what it has, I think, that common sense doesn't have, it's some specifications of conditions under which certain things work, while common sense usually has a couple of principles which are contradictory and you cite the particular principle that you want to, depending upon the situation, and often aren't aware of the contradicitions which are involved. Typically, in the principles we state we try to put in some of the factors which are relevant. But this doesn't make it very satisfying, as far as a direct application, because usually psychologists end up by saying that "it all depends" and you're left up about as much in the air as you were before the psychologist spoke. So, I would guess that in the area that you're working in, chances are that your wisdom gathered from day-to-day experience is considerably better than any rules that you might gather from what I'm to say. I think in most areas what you learn as a result of experience turns out to be pretty much what the psychologist would say if he knew enough about the situation to say anything about it, and usually he doesn't know enough about it to say anything.

What I would hope is that by trying to refer to some psychological principles, that I might give you a different perspective which would help you identify some of the aspects of your experience, which are particularly relevant, and then, perhaps to generalize them in ways that you hadn't thought of generalizing your experience before. In other words, I don't think that I'm going to tell you anything new. I do hope that I'll -- that what I say will have a familiar sound to you, so that you'll be able to identify aspects of your experience, and say: Yes, that's what I knew all the time. And perhaps be able to say: Well, maybe I can extend this experience to something I hadn't thought of extending it to before. So, your task really is to use common sense, with regard to what I have to say, and I would hope that you would interrupt and ask questions, use whatever means you need to shake me up and to challenge me, so that I either back down on some outrageous statement, or so that I clarify what I mean enough that it makes sense to you.

One of the questions that was raised, I think, is relevant here and that was: What sorts of things are different in learning; and I think it's quite clear that knowing something and being able to apply it is different.

I gave a lecture a few years ago to a group of college presidents and deans in New England and at the New England Board of Higher Education meetings; and was talking about principles of learning in a more formal way than I have today. At the end of the lecture, at the question period, one of the presidents got up and said: Well now, if these principles of learning are so good for college teaching, why aren't psychologists better teachers? I was tempted to say that they are better teachers, but I was afraid that he might not believe that, so I answered something about: Well, why aren't physicists necessarily good television repairmen, and I think he saw the point. But the point really is that I can talk about principles, but I can't apply them for you. This is the job that you'll have to do.

Well, let's look at some of these questions which were presented by the groups.

Yes, sir?

Conferee: I wanted to ask what may sound like a stupid question, but wise military for the last 30 years decided that they can make teachers out of sergeants, and less, in a five week course and do a relatively good job of it; and about 90% of them survived; and those that didn't didn't because they made a mistake. We spend a lot of time with principles, theory and quantification, and never get around to "how to do it." And just recently the OEA wanted to make child development people in 36 hours. I just wonder if maybe sometimes we ought to look for a median path between those two. What's your opinion on that?

McKeachie: I think you're right. I would argue, I guess, that there is a point in Ph.D. programs and in bachelor's degrees, with teachers's certificates, etc. -- that in all of these areas there are certain skills that can be taught that are useful in limited situations; and that in human relations, for example, we can teach rules of etiquette which will handle a lot of situations; but that to deal with a variety of situations, to be able to cope with new situations for which we haven't been specifically trained, it's usually helpful to get back to kind of general principles where the rule of thumb, or the rule of etiquette, doesn't apply. And that, most of our educational situations are complex enough so that presumably some understanding of basic principles may be more useful, in the long run, than the rules of thumb, which could be taught relatively rapidly. I must say I generally am on the other side of this, in that I've argued that college teachers, for example, could do a lot better if they had some tricks of the trade, and that there are a lot of simple techniques that make a big difference in just the general effectiveness of teaching.

Well, I've arranged the questions that the groups asked into -- well, really two major groups; one having to do with objectives and the techniques for achieving objectives; and the second one having to do with motivation and various effects of motivation; and maybe a third on individual differences. I suspect that we won't get through all of these tonight, but I'd like to tackle a few of the questions and give you my reactions to them and hope that you'll react to my reactions.

Group No. 3 raised the sort of fundamental question of: How do we establish objectives?

Now here I don't think that the psychologist has any particular competence. This is really probably a question that falls more centrally in the educator's realm than the psychologist's realm, but I'm going to answer it anyway, because this is an area I'm interested in. And I would argue that you really need to specify objectives in terms of changes in the people who are taking part in the conference, that your ultimate objective in any educational situation is some change in the learner; and that to the extent that you can specify changes in learners, you probably have taken the biggest step toward evaluation; that where we have trouble in evaluating, it is usually because we haven't specified the objective in any way that has any really clear connotation of what the learner is supposed to do about the educational experience that he's been in.

Well, if we start off from this, then the question is:

who should formulate these? And here I think it is more or less a matter of philosophy, as much as a matter of principle. But my philosophy would be that all of those involved in the educational situation ought to have some role, or at least ought to be represented, that the conference and institute person who is responsible for the conference ought to be a participant, that the sponsor of the conference ought to be participating -- or the sponsors; and that the participants themselves, insofar as they can be represented, ought to be involved.

One reason for this is simply the practical one of motivation. There is a good deal of experience in industrial settings that participation in setting the goals of an activity and in determining how these goals shall be achieved, makes a difference in the workers-managements commitment to achieving these goals. The classic studies go back to French, Cartes and French; Bevelais and others who showed that if you were changing work procedures in industrial plants, that if management simply told workers that we're going to change this particular assembly line, production dropped and stayed low for a long period before recovering; that if the workers were presented with the problem, and the possible ways of solving the problem, that the change of production methods resulted in a much greater production than had occurred under the old methods.

Now, this is probably oversimplied. It doesn't mean that you can get participants to get all excited about something and learn more, if what you do is bring them in to ratify the decisions which you have already made about what you are going to do in the conference. I think, to the extent, however, that participants can actually participate -- that is, influence the shaping of the conference, that their motivation presumably will be increased.

Another reason, I think, for bringing in representatives of these groups is that there often are motives underlying the various factors in this thing, motives that each of them has, which may not be the motives which are the ostensible goals of the conference. For example, the president of the organization which is sponsoring a conference may really be mostly concerned about whether or not he makes a good impression in the conference, and whether or not he is going to appear enough times and people are going to see that he is really a big wheel in the organization. Maybe this doesn't actually occur, but my guess is that this might be one sort of motive that a sponsor might have, or a person arranging a conference. Participants may be coming to the conference, and their goal may be to have as pleasant a vacation as they can, from everyday activities. Or it may be simply to get some sort of advancement in their job, and they're not so much concerned that they learn anything but they do want to be sure that their employer thinks that they're interested in this sort of thing, or that they've done something which he will give them points for the next time promotions come up. And you can see that there's quite a difference if this is the participants typical motivation, over the situation where the participants are comimg because they have some very pressing problems that they want some help on, because they've got to go back and deal with these problems, or else suffer the consequences.

The person from conferences and institutes may have special motives in this situation; and you know better than I what these might be. It may be professional advancement; it may be to win status, to make contacts with important people in the state or community; to make--to persuade them that you're really a good guy who should be snatched off to be a junior executive, or something of this sort. I don't know what the motives may be, but presumably there are personal motives involved in C and I people if they are human, as well as other people.

The resource persons, who are going to be involved, it seems to me, should get in helping shape the objectives as soon as possible. On the one hand, he knows what his field is about, so that if you're going to utilize him effectively probably he better than anyone else can give you some notion of the field. He may not know what it has to contribute to this particular conference, but at least he is an expert in terms of the resources available. And his reasons for appearing in the conference may be relevant to the shaping of the conference. Perhaps he, too, is interested in contacts with bankers or businessmen or labor leaders or something else. Perhaps he is the person who likes a good deal of applause so that you want to plan a format so that they'll laugh heartily at his jokes, or applaud vigorously when he's through. So, trying to get him involved so you get some idea of what kind of person he is and what he wants out of it, I think is going to be important.

Now, all of these things are not going to come out in the open, but I would argue that to the extent that you can bring them out and recognize them, you're probably going to have a better conference; even though some of these motives may be ones that are really not legitimate motives for holding a conference. But if the participants are coming for a vacation, and every minute of the day is booked up, you're going to have a group who are frustrated, no matter how much and how valuable the educational experience. And this is probably going to get in the way of their learning. And similarly, if the conference participants are people who are concerned about getting a lot accomplished because they've got to do something back home with whatever this is, you might as well find it out so that you don't waste a lot of time on kind of leisure-time-time activities. If they have to make reports when they get home, you might as well find this out so you can give them something to report on, and some way of doing it, effectively.

I would argue that in most cases you can't get all of these people in on the pre-conference planning, and that this implies a certain amount of flexibility in planning and, insofar as possible, a continuous reformulation.

Now, I suspect that from your standpoint the best conference would be one that was so well planned that you just start it rolling and it goes off by itself while you're working with some other conference that's going to happen next week or next month or something else. But I think that in terms of learning, that probably the greatest learning is going to take plce if there is somebody involved in the conference who can "get with" participants and leaders and others to shake up the schedule if it turns out that the objectives of various groups involved here are not being met, in order that you can either reshape their objectives, or reshape the conference to meet some of the objectives. And I think there are techniques of doing this that are not terribly expensive in time. Oh! for example, you might get a panel of participants who agree to act as informists to you about how people are reacting and whether people seem to be getting what they want and how things are going, in a regular academic class, I've sometimes tapped certain students and said: Today I want you to be observers of the class, as well as learners, and tell me what went on, how you think things went, whether or not you think people were getting my points. Oh! I think a technique like this might be adaptable to conferences as well. Probably you can think of other techniques that would be more effective. Well, so much for establishing objectives.

Group No. 3, are there other things that you had in mind there that I haven't touched on?

Well, if not, let me go on to a question raised by Group No. 2, which was: Which kinds of learning don't go together?

I suggested earlier today that you might have to make a choice between different kinds of objectives, or you might have to give up learning on one front in order to achieve learning on another front. And I guess prior to this is Group No. 2's question: What are the kinds of learning that I was talking about when I said there were different kinds of learning?

Well, here I have nothing esoteric to suggest. Essentially I think of learning in terms like those used by the college examiners; and I should give you a reference. I'll give University of Chicago a free plug. Ben Bloom who is college examiner at Chicago, and a group of college examiners, have a book called Taxonomy of Educational Objectives; Vol.1 is the Cognitive Domain. That's one category of objectives. Dave Kraftwohl, formerly of Michigan State University, is the editor or author of Book 2, which is Taxonomy of Educational Objectives To Affective Domain, I think it's called. And these two books are probably the most systematic attempt to specify objectives in ways that are measurable. Now, I've been working with these for some time and I'm not sure that they're practical, but at least it gives you a way of thinking about them. And in the Cognitive Domain which is what's covered in Bloom's Book 1, they try to differentiate between different levels of learning, intellectually. They start with knowledge of specific facts as being the lowest level. Then they go up through such things as interpretation and application of knowledge, analysis of a problem, or of a situation, planning a course of action, and fairly complex kinds of cognitive skills or cognitive outcomes. These higher level things have often been called critical thinking, and Dressel and Mayhew who are at Michigan State University -- Dressel is still there, Mayhew is now at Stanford -- have two or three books which I think are very good in the General Domain of measuring critical thinking and other outcomes of general education.

OK. Then, one set of learnings that I'm talking about are these cognitive learnings, And I would differentiate at least between kind of the low level cognitive things (knowledge, getting information) and the more complex kinds of cognitive things which you might call problem-solving skills or critical thinking.

The second kind of domain of objectives is this volume 2 -- affective. And here we'd be talking about developing an interest in something, developing motivation to learn more, developing motivation to put something into practice or to apply it, changing attitudes developing even a general kind of good feeling about your own university might be an objective that would fall in this affective domain. So, these could be fairly specific interests or attitudes or they could be even such things as basic values, which you might be aiming at, in some educational experiences.

The third domain is one which, as far as I know, is not yet out in book form, in the area of motor skills. I don't know how much you actually get into that. In most college courses we won't get into motor skills a great deal, and I don't know whether C and I --- well, I was thinking of driver training, but you probably don't actually train drivers; you probably train teachers of driver training, where what you're trying to do is help some of these understandings rather than to teach them how to steer the car or something. So -- do you get into any motor skills in any of your conferences or institutes? I can't think offhand of any I've heard of. Maybe you do in firemanship, or something.

Conferee: Artificial insemination.
Bernson

McKeachie: Oh, that's right, Yeah, that would be a good one. We don't do that at the University of Michigan, unfortunately. (Laughter)

Let me give you some examples of cases where I think we showed, in regular college classes, a lack of correlation between different levels. When I'm talking to college faculties I point out that most of our college catalogues aim at these sort of higher level cognitive skills. These are the things we talk about. We say we're teaching the students how to think, or how to evaluate. But in most of our courses, we examine them on knowledge of facts; and we assume that in order to think about an area a person has to know the basic facts and concepts, etc. And I think this is true, that it is necessary to have knowledge, but that it's not true that, having knowledge, one can necessarily think critically or evaluate well, or solve problems with this particular knowledge.

One experiment we did some years ago was one in which we were studying what kinds of students learn well, from what kinds of teachers; and we were still interested, however, in what kinds of teachers were most effective. And we gave the teachers personality tests. We had them observed by observers; we got student reactions to them, etc. to try to find out which teachers were most effective and what characteristecs there were for these teachers.

As our measures of effectiveness, we had a number of things, including attitude scales. But two things which were in the cognitive domain were two parts of the final examination. One part of the final examination was an objective, multiple choice test designed to get at pretty much basic principles and concepts. We tried not to make them pure memory of facts. In most cases they were in slightly different words than they were in the book, or we might give an example which the student had to identify. But essentially, specific memory, and a little beyond that, was what we were trying to get there. The other part of the final examination was an essay question, a fairly broad one, which we designed to get at how well the student could marshal facts into some sort of organized form, could interpret them, and could solve a problem -- sort of thinking like a psychologist would.

We had these essay questions all graded by an outside grader, (after the grades had been turned in by instructor), who tried to evaluate them in terms of these criteria. And we worked on scoring these until we developed a fairly high degree of reliability. Other scorers could score them, using the same sort of criteria and come out with roughly the same sort of evaluation. So, we have these two sets of outcomes. And our thought was that, you know, teachers who were good on these things would probably be effective teachers.

We expected, as you might guess, from the fact that we used two things, that these wouldn't go together perfectly, that there might be some students who would do well in the essay and not so well in the objective, and vice versa. But generally speaking, students who did well on one would do well on the other. And this was right. Generally speaking the bright students presumably did well on both and poorer students did not do so well on both.

But when we looked at teachers, we found quite a different picture. What we did to sort of measure the teacher's effectiveness was to take his students average score on these two types of tests and corrected these for intelligence, that is some classes tend to be a little brighter than others, even though they're more or less electing them randomly. These were all sections of one course; and at various hours during the day; presumably there shouldn't be any particular selective factor, but just through chance you get some classes which have more bright students than others. And so we took this out, statistically, so that we're looking at how high the scores were when you removed the variance due to intelligence.

We found that certain teachers were particularly effective as measured by their student's performance on the objective test; and you could separate the effective teachers from the non-effective teachers on this test.

We looked at the essay test and we found that there, too, we could get a difference between teachers and their effectiveness as measured by their student's performance on the essay test.

Looking at both sets of data, however, the startling thing was that those teachers who were best as measured by their student's performance on the objective test, tended to bethose who were worst as measured by those whose performance was being measured on the essay test, and vice versa. There was a negative correlation, in other words, between effectiveness of teaching as measured by these two different kinds of objective. Now, there were some teachers who were poor in both; some teachers whowere good on both. But generally speaking, these two things seemed to be incompatible. It looked in some respects as if the teacher put his emphasis one place or the other, and that certain teachers presumably were pushing more for getting across the basic facts and concepts, etc., and specific information; and as a result were doing very well, as measured by this objective. But at the same time the students were not gaining the ability to think about it. Other teachers were putting more of their emphasis upon thinking, and apparently doing very well, if our essay test was a measure of this. But in order to do this was sacrificing some of the coverage of material which was necessary for the knowledge test..

Then we had another experiment which I think also illustrated this. Back in -- this was the first experiment I did, actually, back in '46 - '47. In fact, Al probably participated. He was a student the semester we were running this, I think, in introductory psychology. We were trying three different methods of teaching. One of these was what we call recitation method in which the instructor came into the class with a quizz (true-false, -multiple choice), which he gave during the first few minutes. As soon as the quizz was completed the students exchanged papers and they were checked and then handed in for some spot rechecking of the grading and also to record the grades. There might be a demonstration or a brief lecture, if there were some points he wanted to get across; and the rest of the hour was spent in what we thought of as being very old-fashioned drill type procedures in which the instructor would have a list of quite specific questions about the facts in the assignment for that day; and he would keep his grade book in front of him and he'd ask a question and look around the room and call on somebody. He would not call upon volunteers, typically -- just enough so they wouldn't volunteer in order to get out of being called on. He would very ostentatiously grade each student's answer in the book. So, here was a situation where there was a good deal of emphasis upon getting the facts, getting the knowledge of results. The students got these quizzes. They knew whether or not they'd succeeded. They recited. They knew whether or not they were right or wrong in terms of teaching knowledge and getting feedback on it. This method was fine. Personally we expected it to be horrible. It was sort of our example of the worst of what we thought traditional teaching had been.

The second method was one that there was some flurry about at that time. Olivet College was making a good deal of publicity about tutorial methods and adapting the methods of the English Universities to America. And so, we had the notion that in these classes we would simply give the students assignments, and let them come in to instructors offices when they had some questions; or they could go at their own pace. I should say that there was one common lecture for all of these groups once a week so they weren't completely on their own, but for the other two hours a week these students would presumably have been on their own, and if they wanted to do extra reading, fine; they'd be encouraged to follow their own interest and pace themselves in any way they wanted to. We thought this would appeal to the bright student, the student who had lots of interest and ambition himself. It didn't appeal to our Dean, however, He had the feeling that if we didn't hold classes he was going to get complaints from parents about what were we doing with all the tuition money they were paying in, and not providing any classes for students. So, he suggested that we not carry out that particular method. What we did was a compromise. We held classes, but we didn't teach in them in any formal sense. We would come into class, and sometimes there'd be a demonstration or something. Or you might have an announcement or something that you would do for the whole group. But typically we came to these classes, trudging across campuswith two big suitcases full of books which were, as you know, about as heavy as anything you can put in suitcases. We'd array these books out on the desks in the front of the room. These were changed each week to take into account what the assignments in the textbooks were so that they'd be things that the students could do to either get simpler versions of what was in the text or could go much deeper into things that were in the text. Students were encouraged to come up and talk to the instructor individually if they had questions. And generally they were on their own during the class periods. If they wanted to come they could. If they didn't, they didn't.

The third method was what we were hoping would turn out to be most effective, discussion method. In this class the instructor came in with a group of sort of stimulating questions, we hoped; rather general questions. We'd throw out one of these questions and then try to get widespread participation among the members of the group. The teacher would summarize the discussion as we went along, on the board, or maybe keep some notes on the blackboard and summarize at the end of the period. The notion was that this method would encourage students to think and would involve them in the course, and presumably everybody would be happy and learning a great deal.

Well, the results of the experiment were a little shocking to us. It turned out that on our final examination the group which was clearly the best -- at least clearly better than tutorial was the recitation class. These students -- and this was a multiple choice test-- so we sort of rationalized this that they'd been practicing multiple choice tests all of the time, and thus they were ready for the final examination. So, that could be explained away. What kind of shocked us was that whereas we thought of the recitation drill as being very horrible and threatening to students, and feared that they'd rebel. It turned out that they thought this was a great method. Each of us was teaching each of these three sections -- that is, we had three sections apiece, so that we had one section taught by each method. And we were pretty consistently rated by the students in our recitation classes as being more effective teachers than the students were rating us in the other classes. They thought that psychology was fine. They wanted to take more courses and everything. So, it looked as if the best method for teaching was the recitation-drill method.

We did some other studies later on that I hope weakened this a little; but we did a follow-up some four years later which I think again illustrates this point about differences in outcomes not being related to one another. We looked at how many of the students in these various groups had gone on to major in psychology. Typically about 5-10% of our students entering an introductory course are thinking that they're going to major and about the same number at the end of the course think they're going to major in psych, some of them the same and some of them different. (We seem to lose about as many as we pick up.) And in the tutorial and discussion groups we had a normal number of majors. In the recitation-drill group, however, we had a fairly normal number of girl majors, but in these groups, whereas we would have expected something like 35 men to major, based on expectations from the other groups, not a single man majored in psychology, after having gone through this.

Well, this suggests, then, that what we had gained in knowledge in these groups, we had lost on some sort of front of commitment to the field or interest in the field. And I think that there is other evidence which kind of supports this. For example, generally we know that organization facilitates learning and that if you've got something that's laid out in a neat package (1, 2, 3) that people will understand it, remember it better than if it's all helter-skelter. Sometimes this is true. There are exceptions even to this. But Just generally organization is a good thing for memory.

At the same time, studies of the national merit scholars in which people at the National Merit Scholarship Corporation have been studying what determines what these kids major in, what they go on and take their Ph.D.'s in, suggest that these students are particularly motivated by courses which they described as not being very well organized; that they say that in the courses which influenced them to choose their major, they didn't know what to expect from one day to the next. So, here again, you have this notion that maybe organization helps as far as learning and memory are concerned, but may be not so helpful when your objective is one of motivation.

Well, does that answer the general question of Group 2 about what kinds of learning go together, or don't go together; and what I mean when I talk about different kinds of learning? Any questions?

Conferee: What kinds of learning don't go together?

McKeachie: Well, I think probably - generally knowledge -- I don't think anything is necessarily incompatible. I guess what I would say is that you probably are not likely to do everything efficiently through any one program, and that if you focus on one particular kind of objective, you ought to recognize that you probably can't accomplish other objectives. I think there's a temptation in any educational planning to set down a whole list of objectives, which everybody agrees would be good, and to think -- well, we'll do all of these, and we'll plan a curriculum which will accomplish everything. And it's very seldom, I find in our college faculty meetings -- it's very seldom that anybody ever thinks that we've got to give up anything if we add any other objective in. There's always a tendency -- well, we'll require this, perhaps -- another year of language or something. This would be a good thing for people to have, but nobody thinks about what do students give up, what don't they elect, because they are taking an extra year of language. And if we say we're going to concentrate upon teaching creativity this year -- this sounds fine, but what do we do, what do we lose on some other front by emphasizing this? So that, I would argue that you've always got to figure there's some sort of system of the limitation of what you can accomplish in any given educational experience.

Well, let me go on to another question, I think, of group 3's which was: How do you select learning experiences that are appropriate to objectives? And here again I don't know that I can give you any general principles. I can give you sort of experiences from academic life which may be relevant to your situations, but which you're going to have to determine for yourself as to applicability.

I would say that if your objective is knowledge, the most efficient way of getting it across is reading. I don't know how much you use reading in conferences; I suspect not much. I'm involved each summer in an educational program called The National Training Laboratories; and every summer I go to the planning sessions for that and I say: Why don't we have them read some of this instead of giving lectures this year? And every summer they agree and we go ahead and give the lectures. And I suspect that there are probably good reasons for this. I think one reason is that somehow or other people have the feeling they're not doing anything for them if you don't have somebody up in front that they're listening to. And if you simply provided the same time for them to read something -- well, why should they have come to a conference just to have a chance to read. So, I can understand why you might not want to take time for reading. But if you're really concerned about efficiency, it's very hard to beat reading. You can cover a lot of material in a relatively brief of time.

There are situations where other media are useful in transmitting information. Programmed learning is one you've probably been hearing about a good deal. This has been much over-ballyhooed, I think, It's not a very efficient method as far as transmitting information is concerned. It's very slow, and it's likely to be very boring. On the other hand it does have this advantage of providing very frequent checks upon learning; and usually of providing a better thought-out organization than the typical book or article is likely to. And thus, I think programmed learning is a particularly useful tool, if the leaner doesn't know what to look for. What the program does, really, is to take him through the things that he should be doing, when he's reading, and make sure that he's paying attention to the things that are important in it. It makes him go through it step by step instead of sort of skimming over and maybe missing what he should be getting. In a sense, it does what the skillful reader will do for himself, and makes sure that even the poorest reader will do these things which a skillful reader could do more rapidly if he weren't cluttered up by having to flip pages to find out "turn to so-and-so-and so-forth" in the program workbook. So, this may be a technique that you want to use if you're pretty sure that your students are confused, that they can't read the materials and get out of it what they need to get out of it, if they're likely to be rather slipshod in their study habits. And this may be true for certain adult learners who haven't been reading for content and for information for some time. So this might be a useful tool to you in certain conferences.

Lectures, I would argue, are probably better for motivation than they are for information if you have a scintillating lecturer; but I think there is a very important informational value to lecturers and the place where I see lecturers as being of particular importance is when the information you want to get across isn't in print in any easily accessible form for the learner. The lecturer can tell you what's happening in a field right now, what the most recent developments are. And in our field, at least, there's about a four year lag from the time information is discovered until the time it appears in a book. It gets out into the professional meetings within about a year. It's out in a journal in maybe two years, but it's typically four years before it gets into the sort of basic books in the field. And this means that in areas where you're anxious to keep up with changing technology, changing information, the lecturer is probably a good way of getting it. It's likely to be more up-to-date than anything that's in print, although even here I would argue that oftentimes we spend a lot of money bringing in a lecturer, or maybe televising him or something and it would be cheaper to simply have him dictate it and then get it into mimeographed form (or something) to distribute to the audience ahead of time for them to read.

I think there's another advantage to lecturers and that is that most things in print are written for mass audiences, and that thus the lecturer can pick out of the printed materials things that are particularly appropriate for this group. This suggests that you lecture when you've got a group that has some special interests that need some special information which hasn't been brought together in a form suitable for the group (before) in printing.

I think television or films may be useful modes of presenting information, if you're interested in visual identification, or something that they have to see. Otherwise, it's probably a waste of time to put it in films or television. Most of the things we're doing with adults and at the college level don't involve visual identification or eye-hand coordination or other things where you need to see it. Words are generally much more efficient than to see something; so that, again, television and film you may want for motivational factors, but as far as getting across information, only if the information has some visual content that they need to see in person.

Now, when we go on to the, what I'd call, higher level cognitive areas, I think the picture is different. We have a lot of studies on lecture vs. discussions; most of them come out with no significant differences between them in effectiveness and most of them come out that way because the measures haven't been very sophisticated. We simply can't measure differences in outcomes; but there are at least some studies in which differences have appeared, and consistently the differences favor discussion. I mean, if there are any differences , they are one the side of discussion, when it comes to attitude change and to problem solving skills or application. And so, here I would argue that, if you are concerned about application, and thinking about the material, solving problems, evaluating something, that you're probably going to want to use a technique in which the student has a chance to practice these particular skills. I suppose that in both cases -- well, in most of these areas I would say that to some extent the students are going to learn what they practice, and that in this case, if you want them to problem-solve, they probably have to practice problem solving.

Now, we're very fond, in psychology, of saying that practice doesn't make perfect, that you can practice -- well, the classical study was one done by Thorndike 50 years ago in which he had people practice drawing lines, say, 5 inches long. And so people would draw lines like this -- thousands and thousands of trials. He'd measure the first one and he'd measure the last one and there'd be no tendency for the last one to be any nearer 5 inches than the first one. And the point that he made was a basic point, this point of feedback or knowledge of results, that you improve on something if you get knowledge of results. So, if you tell a person this line's too short and then he does this one and you measure that and say it's a little too long, and he does the next one and you measure that one and tell him if that's too short or too long. He gets so he can draw them pretty accurately but, it takes knowledge of results to do this. And I think this is one of the areas we haven't been too careful about in our discussion techniques, that we have a great many discussions where people practice solving problems and applying things but there's no knowledge of results. And I think that one of the problems with non-directive discussions is that they essentially c an become just bull-sessions where people express opinions, but nobody knows whether his opinion is any better than anybody else's opinion; and that if you are going to develop a skill here in problem solving, or a skill in application, then this means that somebody's got to say: Well, that's a lousy idea; or that won't work; or let's try it another way, or something so that the person gets some idea of how close he's coming to the goal, how well he's doing. This doesn't mean that you have to have an instructor do this all the time. I think that, ideally, the person learns to do this for himslef after some practice, and that frequently you want to build in to your learning experience some ways in which the participants can learn to evaluate, whether or not they are making progress, or whether or not they're developing the skill. But this means that probably, if he's going to do this, somebody's got to sort of set the standards to start with. This means you've got to have somebody who is somewhat expert, or you've got to have a number of people in a group who have enough expertise so that they can begin to help each other and you can pool the expertise in the group to get some improvement on the part of all the members of the group.

Well, the third area -- and discussion obiously is not awfully good way of transmitting information. It's slow. People will spend an hour on talking about one point or how it might apply. And surprisingly enough in most college courses, discussion doesn't seem to make any difference. Students do as well on final examinations of information after a discussion class asthey do after a lecture class. (The reason for that is that the final examination is usually based on the textbook, and so it really doesn't make any difference what you do in class.)

This affective domain -- here too, I think the evidence is on the side of discussion techniques. I think that you can create interest, you can develop interests and attitudes through a skillful lecturer; and there've been a good many studies of attitude change. For example, should you present both sides of a problem; or if you want to change a person's attitude, is it better just to present the side you want him to end up on? Well, the answer to that one seems to be that if he doesn't know the arguments against it, it's better just to present just the side you want him to end up on. But if he knows the arguments against your position, then you'd better present those too. Should you start off with pros and then present the cons or start off the other way? And here again it depends upon the person's previous position. It seems that if he's against you to start with, then it's better to start off with his position and get him to kind of come along with you, and then present the arguments in your position, because if you present your arguments first, apparently what he does is to simply debate you himself and he loses what you're saying, in formulating his rebuttal to it, so that he ends up just as negative as when he started. Now, there are some other principles of this sort, but there are things that can be done through lectures. But here again, in the college course studies, which go over longer periods of time, there is some suggestion that attitudes are more likely to be effected in discussion than in lecture. I would guess that laboratories might also be effective in developing interests and attitudes, if the student has a chance to make some discoveries for himself and to do some things on his own. I don't know of any studies which have found that laboratories have any particularly educational advantage, but maybe they do.

Here I think the important thing I would stress is that most of our attitudes, and values and interests, are strongly dependent upon social factors; and that, to a large extent, our attitudes have, as reference, other people, -- we learn them from other people to start with. And to a large extent they are stabilized by other people's attitudes; and that, thus, the big advantage that discussion has is that it gives us some picture of what is happening to other people, and that if we see other people having a different attitude or changing their attitudes, that this is a very important factor in determining what our attitude will be.

The classic studies were done here during World War II when Kurt Louen did his studies on changing food habits; and this is such a common introductory psych. example I'd better ask how many of you know the experiment, rather than repeating it. Well, that's about half and half, I guess. Let me review it then.

Louen was given the problem of: How do you get people to use tongue, sweetbreads, liver, kidney, very nutritious parts of animals which most housewives don't serve very often; because during World

War II these nutritionally good meats were in plentiful supply, but steaks and pork chops, etc., were presumably being sent over to the boys overseas (They never seemed to get to us, but I guess they were there someplace.) Well, Louen analyzed the situation and concluded that the key person was the housewife; that if he could persuade her to buy these meats, she probably would serve them, because most people don't like food to go to waste in the refrigerator; and that therefore his attack should be to change the attitudes of housewives toward liver, sweetbreads, etc.

One of his methods was the lecture; and in the lecture a home economist came in -- or a dietician, and gave a very carefully prepared lecture in which she described how these meats could be served, presented recipes that could be used to make them appealing and attractive and even smell good, and all sorts of ways of getting them dolled up so that people would really like to eat them. Well, this was one technique.

The other technique was a technique in which similar groups of housewives were brought in and were asked to talk about why it was that people didn't serve these meats? "Well, my husband doesn't like them" or "most people don't like the way they smell" or "we don't like to think about where they come from." or what have you. And all of the reasons for not serving them were brought out in the discussion. As they came out the dietician presented the answer that she had presented in the lecture. If it was "because I don't know how to cook them" she'd give them recipes. If it was "well, they don't look good she'd explain ways to dress them up or doll them up" and she'd present the answers to these problems and they'd go ahead with the discussion. At the end of the discussion the women were asked how many of them planned to serve the meat, and almost all of them raised their hands, saying that they did plan to serve them.

Six months later these same participants were interviewed by interviewers who went into their homes. Out of those who'd listened to the lecture, only a small percentage had actually bought and served the meats. Out of those who had been in the group discussions with decision, a very large percentage had bought and served the meats. So, there was a clear difference here.

I think there are two crucial things here. One was the discussion which gave the housewives a chance to get out their own feelings and to get them answered and to see how other people felt about it. But probably the crucial thing here was the group decision at the end. In fact we followed this up with other experiments where we know that this, having commited oneself to something, was an important factor. You can do the same thing, and not have them raise their hands; just ask them, "Will you serve them?" and have them think about it or something. And you don't get the same results if they haven't made a real commitment to do it.

Particularly important was the fact that Alex Bevalais was running these groups and Bevalais was the very attractive guy that women will do almost anything for, I suspect; so that when he asked them how many were going to serve them, all the women raised their hands. And when I tried to repeat experiments of this sort with other objects, I found out typically in a group decision, you get maybe 60% of the people raising their hands that they'll do it. We never could get anything approaching the 95% which he was getting in his groups.

And our experiments tend to show that the size of the majority is a real factor here. In the lectures, everybody probably went away with the feeling: Nobody's really going to serve these things, and so the group norm, the sense of what people are going to do, remained the same. The people abided by it, and nobody served them. When they went away from the group decision, they saw that everybody else had commited themselves, as the housewife herself had commited herself, and the group norm had been changed. And now, the thing to do if you were to be one of the group, essentially, was to serve it. And this worked, even though these particular housewives didn't come from the same neighborhood where they were talking to one another and they could check on one another about it. So, this suggests that oftentimes it's easier to change a group of people than to change a single person, away from the group -- to change him so that he's different from the group; and this is probably one of the reasons why discussion techniques are important, if your objective is one of changing attitudes or changing motives or making commitments of some sort to do something, the motivation to do something. These things are anchored in social norms, and it's very difficult to get a permanent change which makes a person different from everybody else.

Well, let me, --before I go on to another one -- I suspect -- you've been sitting for over an hour. Maybe you'd like to stretch for about 3 to 4 minutes. OK?

(Intermission)

I'd like to take up one other area, I think, tonight. I had expected to get through this board tonight and figured I would have to postpone the second one until tomorrow anyway. I'm not even going to get quite through this board. But this is this question of physical factors, which I sort of brushed aside earlier today.

Essentially the principle I was trying to get across was that anything which distracts the learner from the situation which you want him to be learning in, is going to interfere or inhibit his learning; and that therefore, physical conditions are important, insofar as they reach a level where they are distracting.

I think there's another principle that may be relevant here and that is the notion that you need a certain level of arousal for attention. Don Lindsley, at UCLA, became famous because he and Horace McGowan, the Dean of the Graduate School there, discovered a system of fibers in the brain, called the reticular formation. Before, we'd always thought of information coming in to the eyes and ears, etc., and going up to some part of the brain where you got a percept. You saw or recognized something and then you did something about it, and it went down again to the effectors and you punched the guy or did something else with this information. What McGowan and Lindsley and other people who had been studying this reticular formation suggests is that information coming in has two functions. One is this informational function. (You recognize, you identify, and you do something about it) and the other one is a general function of arousal; and that this reticular formation is, in a sense, something like an automatic volume control, for the nervous system, that it's the thing that kind of keeps your brain going. It's the center of attention, of alertness, of responsiveness to the environment, and that one of the things which stimuli, coming in, does is to keep this reticular system firing; that when we cut a person off from stimuli, when he's blindfolded, his ears plugged, he's sunk in a tub of hot water with just a breathing tube coming out so that there are no stimuli coming in, he very quickly loses the ability to think in any sequential fashion. He's likely to become disoriented, confused, to have halucinations, He loses the ability to plan and to think and to do things constructively with his brain; and that therefore one of the functions of stimuli, coming in, is to kind of keep you awake and alert.

Now, I suspect that in most educational situations you don't get a person ever to the point where there isn't enough coming in that you don't keep this reticular system sending up these impulses which keep the brain alert and thinking, but presumably there could be situations where -- and I think sometimes we approach this in a lecturer who is using slides and who has a very monotonous voice, and the room is dark and people begin to drop off to sleep, at least -- that there simply isn't enough stimulation coming in to keep the person awake and alert, and that thus there may be some advantage in having hard seats, or having windows with light outside, or things going on -- a certain amount of stimulation coming in may be one way of keeping people awake when the lecturer isn't doing a very good job of it himself. So, this might be a thing.

A third thing, I think, is the general problem of frustration -- that if the physical arrangements are such that the individual is having physical needs frustrated (he can't find the men's room, or he can't get his car parked, or something else) -- one of the natural reactions to frustration is aggression and anger, and if he's being frustrated by the general physical arrangements of the conference, the chances are that this is going to come out in defensive aggressive or other kinds of behavior which is going to interfere with his responding normally to your learning situation.

And I guess a 4th principle would be that the different kinds of learning methods, that I've just been talking about, require different physical settings, and that if your setting is such that -- well, you're using slides or film or TV and people can't see them, they obviously aren't going to get as much learning as though they can see them.

At Penn State when they first started using television, they gave students five weeks in the lecture hall, five weeks in television rooms with monitors, and then they had their choice. And it turned out that about two-thirds of the people chose live lectures and one-third chose the television, as I recall.

The people who chose television were those who were assigned seats in the back of the lecture hall; and it's perfectly obvious that you simply couldn't see the demonstrations (This was a chemistry class -- I think it was chemistry) -- they simply couldn't see what was going on in the front of the classroom from their seats in the back of the lecture Hall. The best way to get a good view was to get in a television room where you had a clear picture on the monitor. And similarly, if your technique is one that requires discussion, I think you're going to be much better off if people can see one another, and can hear one another in some sort of U or circular arrangement than if all they are looking at is the backs of the people ahead of them.

So, there is a general principle here, I guess, that the physical settings should facilitate the desired activity, and should provide kind of a minimum of distractions. And this means, I think, that too lush settings may be just as bad as too inconvenient settings. I think there's some relevant research here, too, in studies of educational film and in studies of educational television, both at Penn State and at NYU and in the Army studies. It looks as if the films that work best are the ones which don't have color and a lot of visual gimmicks added to them; that in television, for example, what's called a "bare bones" presentation - where the lecturer is simply talking to the camera and you don't have a lot of extra things around, charts and visuals etc, gimmicking up the thing -- seems to make for better learning than the presentation which has all of these gimmicks added to it. And similarly in films, color seems to interfere with learning more often than it helps.

Now you've got motivational factors here to worry about as well, and I think in most cases these extra things are put in for motivation. But if you're concerned about learning, the basic rule would be, don't put in anything which isn't part of the learning you want to occur, because the chances are anything extra you put in is going to distract people from what it is that you want them to get.

I think Ed Jenusaitis, when we were talking about the planning here, mentioned the Hawthorne studies, and these are relevant, and I think probably quite appropriate to the conference and institute setting. Here again this is such a familiar illustration that I suspect most of you have heard of it. These were the early studies, back in the 1920's, on the effect of illumination and other physical factors in productivity of workers, in which, starting out with the normal level of illumination, a group of girls were in an experimental room. They raised the illumination, production went up; they raised it again, production went up. They raised it again, production went up. They lowered it and production went up. They lowered it again, and production went up. They lowered it again, until it was lower than normal, and production still went up, until it got so dim they couldn't see what they were doing, and the production finally dropped. And essentially, the moral of the story, as it's always told in the psychology textbooks, is that the important thing here is the attitudes of the workers and not the physical factors, that these girls--the effect of the lighting, etc. was not nearly so important to them as the fact that somebody was paying attention to them and was concerned about how well they were doing. And probably your physical factors in conferences -- probably more important than the actual physical effects of nice conference rooms etc. is the sense that it gives participants that this is something the university thinks is important, that their employer has thought enough of them to spend a good deal of money to send them to this very plush setting or something of this sort. These -- their reactions to the setting, in other words, may be more important in the sense of motivational factors than the physical effects upon them physiologically.

Conferee: People were annoyed when they heard the music coming through. Did you see the normally passive Jim Lahr? He became aggressive. He immediately stood up and went out and did something about it, and the music came back louder. (Laughter)

How many thought this was an annoyance to our --- seriously, I just wondered how many heard it?

Another Conferee: Only for awhile.

McKeachie: Well, I think this is probably a good place to stop for now. I'd like to leave you a few minutes for questions before we break up tonight, and then I'll pick up again in the morning and try to answer some of the other questions.

I've forgotten which group raised this question of physical factors -- I'm not sure whether I answered it or not. But are there others on this general area of objectives and matching means and ends essentially is what I've been trying to cover this evening.

Conferee: I suppose the contention is that good technique is one of no particular notice.

McKeachie: Yeah, I think so. It may depend upon your goals. Now, for instance, in a situation like this, I'm very likely to call attention to a technique because, as I see it, this is kind of an example of what I'm trying to teach. And -- well, it's always a bad example, and I hate to put myself on the spot this way, but when -- at least I'd like you to know what went wrong if I do something that went wrong, and have some awareness of what I'm trying to do, So, in a situation like this I might call attention to a technique, like problem posting as a way of kind of mobilizing motivation and of -- oh! the introduction to my lecture tonight as a way of kind of setting objectives for you and for me; of the breaking up for questions, as we did this afternoon as a way of getting attitudes, getting people to thinking themselves, getting them involved. But I think your general principle is right, that when they are concentrating upon the technique and they think "What a beautiful film" you're probably not accomplishing your learning.

Any other questions? Any last words?

Chairman: Dr. McKeachie, we certainly thank you for this very excellent presentation and I know that the group leaders and the recorders who submitted their questions to you earlier feel ---

McKeachie: frustrated, since I didn't get to most of them.

Chairman: Well, the ones that you did answer were very well done, indeed. And tomorrow we'll go into more of these before taking up the topic of the interaction of personalities, and group characteristics.

McKeachie: I don't think we're going to get to that at this rate.

Chairman: You've been very alert and very attentive today, and your planning committee has arranged a series of rewards for you, because you are good learners, and have expressed it that way.--

Conferee: What's the room number? (Laughter)

Chairman: And this series of rewards is expressed in this way, that if you'll look at your program, you may want to make some changes in the times that are there. Tomorrow morning from 9:30 until -- we'll meet in here at 9:30 and we'll stay until 11:30, when we'll break for luncheon, (instead of 12 as indicated there) and then we'll reconvene here at 1:00 for the small group discussions, We'll have one group here and then the other groups back where they were across the hall, with the same leaders. We'll stay in small group sessions untill 2:30. Then at 2:30 we'll come back here for the general session, that appears on your program at 7:30. We'll move that up to 2:30. And we'll be together in general session from 2:30 to 4:00. And then that will adjourn the workshop so that those of you who want to go to Howard Bryans and have three desserts, as Ed did last night, will have that opportunity.

If there are no other questions now, we'll stand adjourned.

Chairman: Dr. McKeachie will react some more to the questions of last night, before continuing with the topic for this morning. Dr. McKeachie?

McKeachie: Thank you.

Purdue's hospitality is very remarkable. The first thing we saw this morning was the University of Michigan television program. I thought this was very considerate of them.

I'd like to spend a few minutes on the questions that were raised about whether or not there's a difference between short term vs. long term learning experiences, whether or not there's a difference between learning in adults and learning in children.

As far as short term vs. long term goes, I think from the psychologist's standpoint, the processes are the same. Even a one-day or three-day conference is long term memory by the standards we're using. We're quite often using learning situations in the laboratory that may be only a few seconds or a few minutes, so that we don't have any data that would show that there would be a difference in the sort of learning process that would be involved in a one-day conference vs. a one semester course.

You, I think, do have to use things like spacing and change of pace, even though I perhaps implied differently yesterday. I think you probably can maintain a tension in a conference for a day, solid, doing exactly the same thing, if you have learners who are highly motivated, where this is really a life or death matter to them. But most of the conferences you're going to be running are not going to be ones where people see this as being a life and death matter, and thus, simply for the sake of motivation, for keeping attention on the learning experience, you probably need to vary activities, to have changes of pace, to give a chance for sort of peaks and valleys in learning.

The second question, the question of: Are adult learners different from children. As I indicated yesterday, generally speaking the adult learner is a better learner than children -- than a child is likely to be. He has a good deal more to work with. Learning essentially depends upon previous learning, and the more concepts you have available, the more previous skills, the better you can add to your score of concepts. I think our whole concept of intellectual functioning these days would lead to the notion that the more you have, the easier it is to add to it. And that thus, the bright person has a big advantage in adding to what he already has, and the older person similarly can learn more readily than the younger person.

As I indicated, however, not only does he have -- the older person have more concepts to work with, more background, more experience. His habits are already better learned, and one of the major problems in learning is not so much adding to, as getting people to subtract out some of the bad habits (or wrong ideas) that they already have. And thus, the reason that we sometimes think that it's more difficult to teach adults is that we're perhaps trying to knock out some wrong assumptions, some faulty habits; and these are more difficult to change for an older person than for a younger person. I guess the implication to this would probably be that with older populations, you probably have to try to shape your learning in such a way that you're building upon the concepts they already have, and that where there is interference from previous learning, that you pay fairly specific attention to this. Often this means making more of an effort to identify the barriers to learning on the part of the person in this educational situation, the ideas which are likely to get in your way, the misconceptions that people are likely to have. You may need to do this more for an older person than you would for a younger person.

I think a second characteristic of older persons is simply differences in motivation. I would say here again that we're likely to think that motivation for learning is less in older people, I don't think that this is necessarily true. There are changes in sortof the kinds of motives people have as they grow older, but I don't think that the overall stength of motivation is necessarily any different for older people than younger people.

What you may have to do is appeal to different motives. You don't have the grading incentive for older learners, typically. Younger children and college students are used to working for grades, and are pretty well trained to know that if you're going to grade it A, B, C, and D, they should work for A's. This is something you probably can't rely upon with the older leaner, But you can rely upon whatever motives they do bring with them to the learning situation.

There are some overall studies suggesting changes in relative strength of important motives with aging. For example, there was a national survey a few years ago of motives like: Need for achievement, need for affiliation need for power, some kind of common motives in our culture. One of the questions that was being tested was a theory derived from the German sociologist, who suggested that we saw capitalism rise in Europe because of the Protestant Revolution and the emphasis Protestant Revolution placed upon individual initiative, etc. And from this psychologists had derived the notion that Protestants should be higher in need for achievement than Catholics. And, in fact, early research at Weslyan University by McClellan had demonstrated that this was indeed true. The Jewish people in that area tended to have the highest need for achievement, need for success; Protestants next; and Catholic, least.

On a national survey it turned out that this wasn't true. Catholics are just as eager for success in America as Protestants; but there were some interesting age trends. It turned out that there was a group of Catholic men who were exceptionally high in achievement motivation; and that this was an age related phenomenon. Among Catholics, need for achievement seems to rise up to roughly the late thirties or early forties, and then to fall off. In Protestants it tends to continue to rise, as older people tend to have just as much need for achievement as younger, or more.

And another factor that was involved here was that the more children the Catholic had, the higher his need for achievement.

Well, the psychologists, who were interpreting this data, suggested that among Catholics need for success, need for achievement is much more related to material success, in supporting a family. Their data also shows that Catholics tend to be more family oriented, less job oriented than Protestants, on the average; and that for the Catholic, these external pressures, the pressure upon the young husband who has a large family to support and who needs to rise in the world in order to provide an adequate standard of living for his family, was the thing that affected his need for achievement. But once the children had gotten grown up and he'd "made it", then he could relax a little, while the Protestant kept plodding away, always trying to climb higher. Well, this would illustrate the sorts of changes that might occur. I don't think they're probably going to make a major difference in any particular program that you're dealing with.

Similarly, the need for affiliation. I think you might expect some increase in this with older age, and there's some evidence that this occurs, that the older person maybe has a greater need to be liked, to have a sense that people are interested in him as an individual. We know that there are changes -- oh! up in the 60's, in the relative dominence of men and women; men tend to become more passive -- less dominant, women tend to become the dominant member of the family, and to have generally more initiative and drive at this period than the man, probably, I would guess, related simply to dominance of sex hormones. There's a change there in the relative balance of male and female hormones in men and women, and this may be one reason why the woman sort of takes over. And another reason may be a cultural one, that once the man is no longer the bread winner and has retired, he hasn't got anything to point to that should make him the boss. As a consequence his wife begins to win out.

And attitudes -- older people are generally more conservative, they're more religious. These might be things that you would want to take into account with an older population.

Probably -- I don't think this means that you can't try out new ideas and new methods of conference presentation with older people, but you should recognize that it's probably a little harder for them to make an abrupt change; and that you may need to do a little more introduction explanation of why you're carrying on a particular conference in a particular way.

I think probably more important than these kind of overall trends in the population of the aging, as far as learning for the adult is concerned, is the environmental situation of the adult learner. The nice thing about college students is that we've usually got 'em. We've got them on a campus where there are libraries, where there are places for them to study, where there are other people studying, and you can give them assignments, and they usually will get them done because this is just sort of the pattern of life that they have. For the adult learner, you've got them for the brief period they're in residence at the conference, but the general environmental supports for learning, before or after the conference, are likely to be pretty minimal. They aren't likely to have a regular place to study, a regular habit of studying; they aren't likely to have other people around them who are studying the same thing so that they can talk about them; there usually aren't library resources readily available to them, or if they are, they're quite likely not to be used to using them. And I think this is where you're more likely to find a difference between, say, college students and adults; it's in the social situation which supports learning experiences outside the classroom or the conference itself. And this simply means that you're pretty much dependent upon what happens while you have them in the conference for a good deal of the learning that you would like to have take place.

Any questions about this?

Let me turn then to the area of motivation, which we had a number of questions on. First, let me answer Ed Jenusaitis' question, which was: Do you need motivation for learning? And here I'm rather heretical as compared with some psychologists; I don't think you do. As I understand learning, and my general theoretical bias toward it is, -- learning goes on whether you're motivated or not. You learn a lot of things incidentally, without any particular motivation to learn them. You can put a person in a situation and he may be there against his will and he still may learn something from it. We have rat experiments, the so-called latent learning experiments which I feel have demonstrated the same thing, although you can usually, if you want to press the concept of motivation far enough -- you can usually find some motive which might account for learning that has taken place in almost any situation. My notion, this is really pushing the concept or motivation furtherthan it needs to, it's simpler just to think of learning as being something that takes place whenever a person's experiencing something.

The latent learning experiments that are sort of the basis for this controversy which has been going on in psychology now for a generation were experiments in which two groups of rats were placed in a maze to learn the maze. One group of rats was given food at the end of the maze, in the traditional method of training rats; and this group followed thetraditional pattern of learning; that is, you place them at the start box, and if you plot the number of blind alleys they go into, or something like this, you find that the first few times they make lots of mistakes. And then gradually they make fewer and fewer mistakes until after a number of trials they are making no mistakes at all.

The other group was placed in a maze the same way and they get in it; when they reached the other end they'd be taken out and started over again. And here the errors stay relatively the same -- very little change, very little evidence of learning, presumably. The same number of trials, but no change in the length of time that it took them to get to the goal box at the other end of the maze.

Now, however, what Tollman and Hunzig and Blodgett (and other people worked on this) did was to put food in the goal box for this group which previously had not had any food in the goal box. They'd just been put in the maze, and allowed to wander around, time after time. And what happened? Let's say we introduce food here -- what happened was that as soon food was introduced, their curve dropped down the same as the curve for the rats who had had food in the maze all of the time.

Well, this suggested then that this curve, which we think of as the normal learning curve is a curve of performance; it is a curve really of how well you can get through the maze when you're motivated to get through it, and that it's not necessarily a curve -- these two curves are not necessarily curves of the learning that was going on. These rats, who presumably, showed in their behavior no sign of learning, who had no particular motivation to learn to get through the maze, they were just wandering around and exploring, satisfying their curiosity mostly, if you will. But it certainly had no particular motive for learning where the food was. They had still been learning the pattern of the maze, and the minute food is put in, so that there's some motive now for performing, the learning shows.

Well, you can account for this in terms of curiosity motivation, as the motive for learning. I think the major point I would make from it is that motivation is necessary in using learning, probably; and that the use we make of our learning depends upon motivation; but that learning can take place without any -- at least any extrinsic motives; and -- well, again, it depends on how far you want to stretch curiosity, if you say that learning -- oh! that the library is somewhere over in that part of the building, when we've had no particular need to use a library, and we've just walked by the reading room, or something; that we learned about the library being there because of our curiosity about it. I'm just inclined to say you learned it because you saw that it was there, and that if you now wanted to find a book, you probably would wander down in the general direction of where the reading room or the library is. Maybe I didn't learn this. Maybe I'm pointing in the wrong direction, but theoretically at least, I would say you could.

Let's turn, then, to the question of curiosity; and let me make use of one of your booklets for the conference. I was pleased to see that my friend, John Gardner, had written the introduction to this book; and given me a beautiful "out" for my discussion of curiosity. He ends up his introduction with these sentences:

"Perhaps the greatest challenge, andthe most puzzling one, is to discover what it is that keeps alive in some people the natural spark of curiosity, eagerness, hunger for life and experience; and how we may rekindle that spark when it flickers out. If we ever solve that problem, we will be at the threshhold of a new era, not only in education, but in human experience." So, the question of Group #1 as to methods of developing curiosity, -- if we can answer that today according to, John Gardner we'll be on the threshhold of a new era, and so I should warn you that we probably aren't going to start the new era today.

I do think that we can give you some leads.

The interest in curiosity as a motive was pretty much dormant in psychology until about the last decade, and the person who probably did more than anyone else to spark this interest was Harry Harlow, professor of psychology at the University of Wisconsin. He had been studying monkey behavior and he was interested in problem solving in monkeys. (I'll probably refer to him later on in his studies on learning how to learn in monkeys.) But one of the things he was interested in was how monkeys learn to solve puzzles; and presumably, if you're going to train an animal like a monkey to solve a puzzle, maybe a wire puzzle -- how you take two pieces of wire apart, or a lock puzzle where you want him to unlock a door or something, you need to provide a reward, a re-enforcement. Well, Harlow was using food and other things, and so he would have a situation where the monkeys would have to work a combination, a kind of tricky gadget which locked the door of their cages, and then if they unlocked it, they could reach through the door. There'd be a piece of food or lettuce or something like this to grab and eat; and they got re-enforced presumably, and then the next time they would work the puzzle faster or they'd be more likely to. But he couldn't keep just putting food there all the time, and he discovered that sometimes he'd put these locks on the cages and he wouldn't be ready to start the experiment yet and the food wouldn't be there, and the monkeys would go ahead and work with the locks just the same. In fact, he discovered that the monkeys who didn't have food actually did better as far as the solving the puzzle was concerned, than those who did have the food. In this case it seemed that the food re-enforcement was not necessary for learning, and in fact those monkeys who worked for food re-enforcements tended to quit after awhile, after they'd had enough to eat.

Those monkeys who worked the puzzles just, presumably, for the fun of working the puzzles and opening the door (in some cases he had it that they could open the door and look out and see another monkey in another cage or something like this) -- these monkeys tended to persist at the problem solving longer than those who had the food every time.

Well, he began to develop and to preach around the country the notion that monkeys are curious (which is not a great revelation probably to anyone who's observed monkeys' behavior very long.) But it was kind of a revelation to the psychologists who'd been sort of looking, in terms of re-enforcement theories -- that you had to give food or other primary re-enforcements to teach animals to do anything.

Well, Harlow did a number of studies, trying to see what different kinds of experiences meant; and I think his work -- it's generally sloppy, experimentally. The Hullian psychologists who stress experimental design are kind of shocked at Harlow's lack of theory and his lack of clean experimental design, but nevertheless most people are convinced, I think, that Harlow has demonstrated that monkeys are curious, and that this is an important motive for them in problem-solving and in learning; and that they will do things just to look at something different. One of the things he did was to put toys in a cage next to them, so they could open a door and look at this toy, or set of blocks or something. And he found out that they were -- persisted at this, particularly if he changed the things that were in the next cage -- that they might, if the same things were in the next cage, a picture or something, they might after awhile get tired of opening the window to look at the same picture, but if you kept changing things, they'd keep on opening the door to look out to see what was now in the cage.

Well, this relates to our general notion of what it is that arouses curiosity. Our notion is that it is novelty, that it's newness, and that the human being, (or other organisms, for that matter), is always at a certain level of adaptation to the stimuli in the environment around him. We're sort of adapted to a particular level of stimuli coming in: a particular level of light, a particular level of sound, and that -- and we have some research on this which shows that even in the brain itself that -- you put an animal in where, say, there's a clicking noise and you can trace the neural pathway of these clicks coming in, and how they fire up this reticular activating system etc. when you first put him in the situation; or he's in the cage and you start the clicks, you can see that he is -- this originally causes a burst of activity; there's continuing attention. But if these clicks continue, before long the activity dies down, and in a sense he's adapted to it (in our psychological terms). He no longer is paying attention to these cliks; they've become part of his level of adaptation. But then, if something else comes along, say, you flash a light or if this is a cat and you have a mouse run out or something, then there's another burst of activity and he focuses on this new stimulus until he's adapted to it. The notion would be, then, that all of us are carrying around these adaptation levels to the various kinds of stimuli which are in our environment, and that when new stimuli come along, they start a burst of activity. If they are very new, very strange, this neural activity is so great that we tend to try to retreat and to get back down to what is a sort of passable level of firing in the brain. We show evidences of fear; but in normal resting state, we're seeking a little more stimulation. And thus this new thing will attract our attention, we'll approach it, we'll pay attention to it, and presumably (if it's a learning situation) we'll learn from it.

I think that the most obvious applications or examples of this are in the area of music and art and aesthetics generally. Some of my colleagues have been particularly interested in this sort of thing; and we can do studies with animals, I think, which illustrate why it is that music and art tend to become more and more complex, that the person who's a student of music or a student of art tends to prefer the modern music, the modern art, the more complex forms of art and music, as compared with the beginner, the untrained person who maybe prefers rock and roll or folk music or things which are somewhat simpler in form. I'm a folk music fan myself, but I also like Hinduma.

I think that our notion would be that you pay attention, you're attracted to stimuli which are just a little beyond your present level of adaptation; that the person who is trained in an area, who has a good deal of background, has moved up his adaptation level so that he can encompass a good deal of complexity in a situation. He can take a good deal of newness, of differentness, from what might be the ordinary run of things for other people, because he's familiar with it. If you practice a choral piece -- I happen to sing in a church choir so this is the sort of example that I think of -- usually in modern music when we sing a new contata or something by a contemporary composer, the first few times it sounds horrible, even if we were preforming it well, which we usually aren't. And even to listen to a contemporary composition, for me, is not particularly pleasant the first time I hear it. The dissonances, the differences in the scale, etc. are just unpleasant to me, rather than pleasant. After I've sung it for awhile and --- or on the other hand, after I've heard it many times, then gradually I begin to find this more and more beautiful and eventually enjoy it very much. And this, I think, is what happens in most aesthetic situations, that you raise your level of adaptation and you become more and more familiar -- like the squirrel going out to explore the football stadium -- until you're able to handle a good deal of novelty.

I think this would suggest in -- oh! choosing a style of architecture for your house, that you probably should choose something which is a little more extreme than you like right now, because after you've lived in it awhile it's not as likely to bore you as something which is right now at a level which you like and which will eventually become boring if you live in it very long.

I think also that it gives us some notion of what happens in musical education and in art education and enables us to understand why the trained artist or the trained musician will be willing to spend a good deal of time and will be very interested in some -- what seems to us rather simple composition. A musician, for example, may find a great deal of enjoyment in something by Palestrina or in a Gregorian chant which to the naive person seems relatively simple and straightforward. There certainly isn't anything complex about that; but I think what we do in education frequently, is to build in the ability to see new dimensions in things like music and art, so that to the trained person a particular stimulus may have a great deal more complexity -- there may be a lot more facets that he's able to perceive, than for the untrained person. And thus, he may find folk music particularly interesting and enjoyable because he's aware of changes in key, or changes in rhythm which to the ordinary person are meaningless. But to the musician these are new dimensions which keep the thing interesting for him. Thus, I would suggest that you can often create curiosity, create interest, either by providing stimuli which are more complex than the person is used to, which are new to him, or by teaching him dimensions, ways of looking at familiar things which are new, which give him a different perspective on something that _is_ familiar to him. And I would hope, for example, in the two days we've had together that one of my purposes would be to make conference work more interesting to you, by giving you some different ways of looking at the thing -- presumably some concepts that you might not have thought about before, which give you a kind of different slant on your work. And I think this is probably one of the reasons for higher education, the question yesterday about: (Why don't we just teach the skills that are needed) is that for people of your level of intelligence, just to do something over and over again, because this is the right way to do it, isn't very interesting. You'd get bored with your work after awhile. And the reason for continuing your education, for studying the area, is to give you some notion of the possible complexities that lie in this work, They may not make you any better conference operator than somebody who just goes through the motions because he's been told you do it this way, but understanding something of what you're about presumably should increase your interest in the work, and your understanding of these complexities is what keeps you going, I would guess.

Well, that doesn't answer the question that was also raised, I believe, by Group 2, of how you balance uncertainty and familiarity. I think it illustrates that you're probably going to have big individual differences. In most of your conferences you probably have some people who already are familiar with the area and other people for whom even the trite sayings are new and fascinating; and if you go so far as to introduce a lot of new complex material, you're just going to lose and make afraid the people who have come in completely naive. I would suggest that oftentimes, however, you can take things that are fairly familiar and maybe throw in a few extra ways of looking at them, a few new dimensions which will give some spark for the persons who are old hands in the field, and yet you've got the basic familiar situation for the people who aren't. But, as I say, I think it's a matter of kind of intuition, of kind of keeping an eye on different people to try to sense whether you're going too fast for them or too slow for them, of being able to react to feedback from the group, rather than something that you can lay down any rules for, that this is the right amount of newness for any conference.

I think one thing, -- I don't know how available it is to you in most conference planning -- would be the provision of options, because essentially what we do in college curriculum planning is to allow electives to take care of this sort of thing, where the student who doesn't have much background in an area can take an elementary course and the student who has more background can take an advanced course. Whether or not it's possible within a conference or institute format to allow different pathways for people with differing backgrounds and competencies I'm not sure. But this would be one of the sort of natural ways, I should think, of trying to provide for the curiosity and interest of people with differing understandings.

One way, maybe, of getting information would be this notion people mentioned yesterday of individual counseling ahead of time where you get some idea of what range you have to deal with, and how much interest they have in various possibilities that might be built into the program. Maybe, even if you couldn't have individual counseling, having them list their goals at the beginning of the program, when they register, would at least give you some chance to get information on how the goals of different people differed. In fact, I think the technique of having people specify goals is probably a good one anyway. The notion would be that people are motivated to some extent by perceptions of gaps, of questions that are unanswered, of things that they haven't got settled to their own satisfaction. And I suspect that many people come into conferences, and they're just there because they are there, somebody asked them to go, they are president of the local chapter of such-and-such and the president always goes to a particular conference, and that's about as much as they have in mind when they go to the conference.

Presumably, if you're trying to arouse motivation, one way is to kind of get the person to arouse his own motivation by thinking a little about what he might get out of the conference himself. As I indicated yesterday, Berlais suggested that one way of increasing motivation and curiosity is to ask questions, rather than giving statements. Giving statement is good as far as learning information is concerned, but giving questions seems to be better as far as giving motivation is concerned. And he found that the questions that were most effective were those which challenged ordinary assumptions. This would suggest that one way of arousing curiosity would be to look at the most cherished beliefs of the group that you're preparing the conference for, and then say: Is such-and-such really true, or something like this. And you'll probably have them descending on you in hoards. Of course there's the danger of setting up expectations that you're not going to be able to fulfill -- you know, "Is Christ really going to rise again in Ypsilanti on March 3rd" may not be a good lead-in to a conference if you can't really produce it. But presumably, this notion of asking about something familiar in a way that they haven't thought of before would be one technique of accomplishing a rise in curiosity.

I think, again, on the individual differences side, we have some evidence from the work of Norm Feuthers who is a psychologist in Australia, -- he's been interested in individual differences and achievement motivation, and has shown that if you give problems to students who differ in achievement motivation, that their interest in these problems and their persistance in working at them, depends upon two things: How difficult they think the problems are, and what level of achievement motivation they have. For one group of students he'd present the problems as being bery easy problems; and most students who do these problems get them right away. I presume that you'll enjoy doing them and will be able to get them without any trouble at all. These are very easy problems. Another group of students was told: These are very difficult problems. Many students have great difficulty in getting them. I hope that you'll work at them as well as you can, but these are extremely difficult.

Now you might like to try thinking yourself: Now, which set of problems do you think people will stick at the longest? They are the same problems in both cases. There are simply different instructions in how easy or hard they are, and actually in both cases a number of the problems are completely insoluble. They look as if they could be solved, but there is no solution to them. There are a few problems stuck in that are soluble, so that the students won't catch on to the notion that all of the problems really can't be solved. But there are enough problems that can't be solved so that you have a measure of persistance. Nobody can get the thing done, in other words. And then Feuther measures to see how long they keep working at these problems which are difficult to do.

Well, as I said, the length of time that they spend depends upon the sort of persons they are. Take the student who is high in need for achievement. This student, as I suggested yesterday, is one who is most challenged by a situation of intermediate difficulty; that is, something where he's not sure to fail, and not so easy that that he's sure to succeed. This student, when he's given the problems that are supposed to be very hard, and he works at them for awhile and finds that he's not doing very well, quits. In other words he starts out with a level of difficulty -- this is 50-50, very hard, and very easy. (writes on the board) And he starts out with -- here's the range he prefers -- he starts out up here, thinking that they're very hard. He does a few, he finds out that they are very hard. It becomes less and less something that he wants to do. The longer that he works at it without solving them, the further it's getting away from the level of difficulty that he works on, so he quits, despite the fact that these are people who like to compete, and who like to solve problems generally, etc.

You take him on problems now, and he's told that they are very easy. Now, as he works at it, and he finds he's not doing so well, he decides they are a little harder than the instructor told him they were; he keeps working, and he still is not doing too well, and so as he keeps working at them, they come more and more into his preferred range of problem solving. Now, he sees this task as a real challenge. It's not something that's so easy that he doesn't have to pay attention to it, and thus he keeps on working for a good deal longer time than the same type of student does when he's told that these are very hard problems.

On the other hand, you take the student who fears failure, and get just the opposite results. Here's the student who is told these are very easy problems; you should be able to get these easily. And so he starts out here. This is something he can do, and then he begins to experience failure. They come up in here. And for him this area around 50-50 is the area that is most threatening. This is where he's the most anxious in a situation where, whether he succeeds or not depends upon his own ability etc., so the longer he works on these the more threatening these problems become. Now, here are some problems that were very easy; he should have gotten them and he's not getting them; and the more he fails the more anxious he gets about it. So, when he's told that they're very easy, he works at it for awhile and then he gets out of there because he's becoming too anxious to stay in the situation.

On the other hand, when he's told that they're very hard problems and he works at them, and he finds out that they are very hard, he's not doing very well, he keeps working and they're still very hard. And he keeps on indefinitely because the longer he works, the less threatening this task becomes. He says these are very hard problems, I couldn't possibly be expected to solve them, I shouldn't feel anxious about this, so this is fine and I'll just keep on working away and nobody can blame me if I don't get them. So, in his case he persists when the problems are hard and the harder they are the better, as far as his perception is concerned.

At this point we have probably caught up to some extent with what football coaches have known for 50 years or more, because this is essentially what football coaches do. When you're faced with a team which is almost sure to beat you -- you're on the bottom of the Big 10 and you're meeting the conference leaders, the coach -- you're reading the newspapers and all during the week he's saying, before the game, we're better than we've looked so far. All we've got to do is come up with the game we're capable of and we'll knock these guys off. They've been over rated so far. They've had weaknesses; they've been lucky to get where they are. Sure, they're a fine team, but we're just as good if we play up to our capacity. And so all the time, where -- he's assuming, of course, that his team is high in need for achievement. And so, what he's trying to do is move this very hard task down here into the level of maximal motivation, the 50-50 level.

On the other hand, if he's the guy who is coaching the top team and he's playing the bottom team, this coach is likely to be using just the opposite approach. He starts out with his team expecting this is going to be an easy game, and all during the week he's saying: Now, we've been lucky so far; we've made mistakes, we can't afford to make more mistakes of the sort that we made in the last game, even though we won by 50 points, and this team we're playing is on the bottom, it's true, but they've had bad breaks, and they're going to be up for this game; they're going to be out to knock off the champions. You've got to be on your toes. This is really going to be a game where we've got to -- where we can't be sure of winning at all. It's very possible they'll knock us off. And so, he, too, is trying to move his players into this region of uncertainty of the 50-50 probabilities where they'll be maximally motivated.

Well, I think this probably has implications for planning conferences. Presumably, if you're dealing with a topic where most of your participants think this is going to be fairly easy stuff, where it's going to be pretty routine, then your job is to shake them up, to make them realize that there's more to the field than they'd realized, and to help make it a more difficult, more challenging problem for them. If they are coming into a situation where they perceive it as being a very difficult area, then what you've got to do is to move it down, try to simplify, try to make it familiar to them, try to show them that they really can accomplish things if they'll work at it. And you've got to worry about these individual differences, of course, about whether these are people who are basically failure-motivated or basically achievement-motivated; and I don't know how you're going to sort this out in a three day conference. We can't even do it over a semester. I guess all I can say is, it's complex and I hope that you're seeing this as an easy problem, and that seeing it is more complex will move it up into the middle range again.

Another question that was raised, was sort of the question of what ---Oh! -- Well, let me go a little more into this. There's a point I'd like to make here that I didn't get to make in terms of learning principles yesterday, which I think is important. Maybe it isn't.

You remember that one of the things that I suggested was that if you're dealing with something familiar, the way to create interest and curiosity is to show the different perspectives on it, the new dimensions that enter into this, the complexity of the situation. And I think in many forms of education this is really what our basic task is; when we talk about a liberal education, in many cases what we're doing is teaching a person to see a particular problem from more perspectives than he ever saw it from before. He sees more in the situation, If it's art, he recognizes a lot more things to look for in art; if it's music, he's aware of differences in the timbre of the instruments, differences in harmony, the complexities of theme, and counterpoint, etc. He's aware of a lot more in a particular situation. You're building in, then, new dimensions; and you're trying to enable him to discriminate between something which has one point in this dimension vs. another point in the dimension.

Well, how do we build in these dimensions, these new ways of looking at things, this different perspective?

Well, I would argue that probably we don't do this by just submerging the person in the complex situation to start with. In law school, for example, I'm frequently lecturing to law professors or law teaching-fellows and one of their techniques is the case method, which is a fine teaching method for certain purposes. But they start right out with their freshmen law students, giving a real case, and the students learn the case, and they're supposed to pick out the particular points of law which are involved, the particular dimensions which the teachers want them to get. And it's my suggestion that this is probably a very ineffective way of teaching beginners in an area, to start out with a real case which has lots of dimensions, has lots of complexities, has lots of extraneous elements; but that rather, for their beginning students, they ought to select an oversimplified case, in which most of these extraneous things are stripped out and a case which makes the point in kind of an extreme fashion, so that the students can now get some grasp of what the ends of this dimension look like.

The basis for this sort of advice to teachers would come from two or three sorts of evidence. One was a Russian psychologist (whose name I've probably repressed because of my ethnocentrism or something), who, back in about 1916 was conditioning dogs in the Pavlov tradition, and found essentially the same thing that a few years later Lashley discovered -- and I'd always though Lashley was the first discoverer of this, but it turns out the Russian was first. Let me describe Lashley's experiments since that's the one I remember.

What Lashley was interested in was training rats to discriminate two shades of gray. Lashley used an apparatus where the rat sits up here on a platform . Over here there are two doors. There's a gap in between, and usually he has some sort of basket down here to catch the rat if he falls. And he jumps over here, and there's a card here with a figure on it, or a color or something. If that is the right card falls down and he lands on the platform, and there's food there to re-enforce him. If he jumps over here to the other card, which is the wrong card. he bangs his nose against the card and falls into the trap below and has to start over again. And these cards are switched back and forth and the notion is that by bumping their noses on it, they pay pretty good attention to what's on the cards and that you can test whether or not rats discriminate colors; whether they can tell triangles from circles and so forth, by this sort of procedure.

Well, Lashley wanted to see how well rats could discriminate two shades of gray; or whether or not they could even tell the difference between different shades of gray. So, he started training rats on these cards, one card being a darker gray and the other being a lighter gray, and let's say the darker gray was the right one. So he shifts the darker gray and the rat jumps over here and hits it and gets the food. The next time the darker gray maybe is over here. The rat jumps over here and bangs his nose against the light gray and falls down below. He keeps at this, trial after trial after trial. The rats never seem to learn it. It takes hundreds of trials before they show very much improvement on discriminating these two shades of gray.

Well, does this mean that rats can't tell the difference between shades of gray? Well, you might conclude this. But then Lashley got the notion, -- well, maybe they're just not aware of gray as being the dimension that's important here, and maybe I ought to try a different approach. Let's start with something that's more different. I'll start with black and white. So now the black card becomes the correct card to jump to, and the white card is the wrong card. And he starts the rats off, and they jump to the black card and get food. The black card is over here. Next time he jumps to the white card and doesn't get food and falls down. Next time they jump to the black card, and in 30 or 40 or 50 trials they are jumping consistently to the black card. So, they can discriminate black from white.

So, now he tries the gray cards to see what they'll do with the gray cards. And right away, from the very first trial, the rats jumped correctly now to the dark gray card. And of course he reversed it, and he had another group where the light one was the correct one, etc. In other words, rather than training on the complex, or very difficult discrimination to start with, by picking things that are out here at the ends of the dimension, that he wanted them to discriminate, he was able to train rapidly. And this was transferred-in perfectly to this very difficult discrimination -- or at least what had been initially very difficult.

I think that this probably is true when we're trying to give a new perspective, to make people aware of some new dimension in a situation or problem that they've been dealing with over a period of time, that it often is not going to be effective to make the first attempt (to make them aware of this dimension) one that is quite difficult, even though that may be the realistic one that they're going to have to cope with; that there is a place for picking the extremes, for picking something that is out here and out here, even though you don't very often run into such extremes in real life, and then, after they've become aware of this as a possible thing that should be attended to in their situation, then bring them into the real situation and see how they operate with finer differences of the sort that occur in everyday life.

I think this is a technique that many of you use. I was asking in the car coming down for some examples. I couldn't think of any. Al Storey mentioned that when he was trying to get across the concept of listening to other people in a conference or discussion group that he used the technique of having -- pulling people out of the audience. Al, why don't you describe it. You can probably -- Where is Al? You can do it better than I.

Storey: Jim, I wonder if you'd come up here; and would you, Berney? And Dick, would you come up here a minute?

McKeachie: This is completely extemporaneous. He didn't know I was going to call on him.

Storey: What we're trying to do is just set a conversation in which these three men are fellows sharing ideas about conferences, length of conferences, on learning that takes place. And one of them will just make a brief comment, and then before either of the other men can add to the conversation, you will say to the first man: Did I understand you to say -- and then he must repeat to the first man's satisfaction a proper interpretation of what that man said. And when he completes it to the satisfaction of the first man, then he can go on and make his own contribution to the discussion.

Speak loudly so they can hear you.

First man: I'm convinced that more learning takes place in a three day residential conference than in a three-day one, consecutive-day meetings on the campus where the students or the participants go home in the evening and come back again the next day.

Second man: Jim, do I understand you to say that the in-resident training situation has more learning taking place, rather than if people come in and go back and forth home over the same period of time? Is this what you're saying?

First man: A three day one.

Second man: Three day one? I don't quite follow what you're saying by a three day one. What do you mean by a three day one?

First man: A three day conference.

Second man: One three day conference? In residence, more learning is taking place than if I came to a conference where I came one day at a time, for three days and went home and returned to my work or whatever it was, over the same period of time. Is this true?

First man: I think you said it better than I did.

McKeachie: Now, your contribution to the discussion -- apparently now you have something to say about it.

Third man: Well, if this is true, if what you're saying is true, then I think in-resident training situations, the resident type set-up of three days at a time, will probably have more people going back to their jobs with behavioral changes than we would if they just came one day at a time, where we could reach them and get a feed-back from them.

Second man: Let me see; you agree with Jim then, that there would be more learning taking place in the residential setting where people stayed on the scene and didn't go back home; and that you also believe that we would be, at the end of a three day period, taking back more learning if we stayed in a residential setting.

First man: No, I didn't say that. I said we would contribute more. We would contribute more to the individuals, on the basis of the three day session in residence than we would contribute if they came one day at a time and we lost them over night, so to speak.

Third man: Well, in other words, do you feel that there would be some loss if they go home in the evening.

First man: That's right.

McKeachie: Now, do you have a contribution to make?

Second man: Yes, I firmly believe that one day conferences are much better than three day conferences. (Laughter) (Applause)

McKeachie: Well, I think this is a good illustration of my point. Actually, I suppose if we were to follow Lashley's paradigm, what we would do is pick this as one kind of extreme. Then, maybe, for the other extreme we'd have a situation where we plugged up their ears in some way so that they couldn't hear what the preceding person said at all, and see how the interaction went along, if people just weren't listening to the person ahead of them, and were just responding to the problem in general or to the earlier part of the conversation; and presumably with a demonstration of these two extremes we would build in this dimension of listening in communication. Is that the sort of point you're trying to make with that demonstration, Al?

Storey: The difficulty sometimes we have with what is known as understandability, and how quickly we sometimes do speak and react to what other people say when maybe proper learning and communication hasn't taken place; or there is a understanding of the other person's intention.

McKeachie: Well, the major point is then that -- well, I guess I kind of made a sequence of points here. I started out with curiosity and then suggested you enhance curiosity and interest by building in new dimensions; then suggest that you build in dimensions by perhaps picking extremes, if people aren't familiar with the dimension ahead, and then narrow it in, maybe, you might follow this up then with an example of differences in communication that aren't as extreme as those that we illustrated.

There were questions from Group No. 3 on the difference between feed-back -- well, the relationship between feed-back, re-enforcement and evaluation. Let me run through these quickly.

In feedback, I was trying to make the point that there are two kinds of feedback, the way I look at it: (And this I borrowed from Ed Walker, an experimental psychologist.) informational feedback and affective feedback that you can, as the result of something you've done -- say, you've tried a new stroke in golf or something, a new grip. You can get informational feedback in terms of where the ball went, whether or not it worked out right; but I would say that separate from that is your good feeling (if it goes into the hole and you make a hole in one) or the bad feeling you get if it's gone off into the rough somewhere. And the informational feedback is necessary for learning, for improving, as far as reaching the standard is concerned; that you need to have information about how closely you've approached the standard in order to get better, as far as this particular skill is concerned. But the affective feedback is important in terms of your motivation to keep learning, or to use this particular skill. And thus rewards, making a person feel good about something or punishments, making him feel badly about it, are important in determining his later motivation to use this particular learning which he's had; and that they are not so important as far as whether or not he learns; that the information, is the more important.

Re-enforcement is simply a general term for reward and punishment, and generally speaking psychologists would say learning is enhanced by re-enforrcement. Some psychologists would say that re-enforcement is essential for learning; as I indicated earlier I don't think that it is essential. But usually, as I say, re-enforcement has included both the reward and the punishment and the information that comes from the reward and punishment as to whether you've been right or wrong.

Now, evaluation, I would say, can be used to provide feedback, both the informational feedback and the affective feedback; and I think that in evaluation, you probably are clearer about this than most educators are because one of the things I find in talking with the -- Oh, I'm on an advisory committee for these new science programs, like Physical Science Study Committee, School Mathematics Study Group, and this sort of thing, and what these people get confused about is what they are evaluating. And so, sometimes they will say: Well, we can't give this test because it wouldn't be fair to the students who didn't have a physical science study committee's physics course, because they never had this material. And so, we can't give that particular test because it isn't fair. Well, what they are confusing here is the evaluation of the learner in terms of determining whether he has achieved the objectives of the course he's in, which is what we're usually doing in a final examination in a course an evaluation of the curriculum, or the learning experience, for the purposes of the person who is constructing the learning experience. And for those of us who are providing millions of dollars to Zacharias to develop these science things, what we're concerned about is whether or not the kids who are getting these new materials learn the new materials that are provided for them. We're not so much concerned with whether or not it would be fairer to give a student in a conventional course a D because he didn't pass this particular item which he never had in the first place. We would say that for grading, the teacher may want to use one kind of test (and this may be helpful to us in evaluating the curriculum) but that we need to use other kinds of measures which are not appropriate for grading; that thus evaluation techniques can be used to give some feedback to the learner of how well he's done, how well he's achieved the goals of the learning experience as far as he, as an individual, is concerned, but that you also want to build into your evaluation instruments (and I think this is mostly what you are doing in your conference evaluation) feedback to the planners of the conference, which will be helpful to them in planning future conferences for similar groups.

I think that evaluation devices can also be used for motivational purposes, and for learning purposes themselves. Generally in my own teaching I try to make the test something which the students will learn from, and I don't worry too much about whether this is going to help me in giving them a fair grade. I've found that I tend to give about the same grades regardless of the sort of tests I give, and so this probably is an indication of the poorness of my evaluation; but that I can make quite a difference I think, in what they're doing while they're taking the exam, and how much they're thinking, how much they're learning beyond what they had learned up to that point.

So that, I would suggest that in thinking about your evaluation instruments, you think about it as a device for reaching the goals of the conference, not just as a device for getting some information back that will be helpful to you, but as a device that may help promote some of the sorts of learning which you are trying to accomplish. I think one way of doing this is to ask for some recall, and for some repetition perhaps of things that have happened during the conference that you want to point home. So, you might ask specifically about this point, this point, or this point, which you kind of want to have stand out in their minds as they go back.

You might want to use it as a motivational device, so that you might not only want to ask them how they liked the conference, but something about what their plans are for applying it or for using the material after they go back again.

You might want to use it as a technique of gaining commitment to carry out a plan of action. You might want even to use it, the evaluation period, as a period when they think about plans for carrying out some activity back home, which would be one of the goals of the conference.

Well, I'm assuming here that most of your evaluation is going to have to take place while you have the people. I would say, in terms of my earlier talk about objectives, yesterday, that of course, if you can follow up on this, that you're that much better off. As I suggested in talking about the Louen Group Decision Experiments, this evaluation time might be one chance for getting people committed to agreeing that they're going to do something; and most people, if they've said they'll do something, are more likely to do it than if they've never been asked whether or not they would do it. In fact, in one of our experiments, we found that this was very important that if you just gave a lecture, designed to produce a certain effect, and left it at that, people would go away and feel fine about it. If you gave the lecture and then just asked them: Will you donate blood or whatever it was that we were trying to get them to do, they were more likely to do it. Better yet, if you could get them not only -- not only ask them to, but also to say that they would do it, that they were still more likely to do it. So, just asking for a specific commitment is probably going to make a difference. In fact we found that even the people who didn't make the commitment -- you asked them: Will you donate blood? -- and some people would sign up, or would raise their hands and say that they would. These people were the most likely to ; but even those who said they weren't, who didn't say that they would do it, were more likely to donate the blood than the people who had never been asked whether they would, having had the same lecture but not asked whether or not they would donate the blood. This was a lecture where we were trying to persuade them that it was a good thing to donate blood to the Red Cross. So, the evaluation questionnaire may be a way of kind of increasing motivation and commitment toward achieving some of the goals of the conference and in some of the Louen experiments I think there is a suspicion that one of the reasons it was effective was that -- this was another one, not the food habits one -- they knew that someone was going to come around in 6 months and find out whether they did it. And so, if you have a chance to do a follow-up questionnaire, the chances are that if you let them know you are going to be asking -- coming back in 6 months to ask you how this worked out, whether you actually did use it, this probably is another plus factor for you, if you have some objectives of changing their behavior after they get back home.

I think also, in terms of general motivation, that here you're in an area where there is a good deal of social effect and that you can convince a person very well in your learning situation, where you've got the group norms working for you perhaps, if you've done a good job and people are kind of "with the conference" and what it's trying to do, where it may be quite a different thing to have them carry this out when they get back home. Ron Lippitt found -- I suppose this is probably classic in conference planning. I don't know whether -- well, I presume it is part of your training, but let me remind you that he found that you get much more results when two people come from an organization to a conference than if just one does; that if you've got two people coming, then when one of them is planning to do something, there's somebody to see whether or not he really does it, and somebody to buck him up if things are going against him; and that the two people are much more likely to get something carried out back home than one.

I think Ron also has some data which suggests that you can't take back-home application for granted, that if you are concerned about real changes in behavior as a result of a conference, or real effects on the organization back home that this has got to be built into the conference itself. Some chance for planning and for anticipating the various barriers that are going to interfere with getting the thing done, so that the person is not going out feeling great about "Gee, we'll get this done when we get back" and when he gets back nobody else is interested, he finds out that the boss really wasn't committed to this in the first place, and the whole thing fizzles out very shortly.

This course would also involve pre-conference planning. I think that --- I don't know enough about the realities of your situation , but presumably, if people are sent to the conferences by organizations, you're going to have a lot more effect, if the person who, or the organization which has sent the person, expects something when they get back. And you may want to build into your system of choosing delegates and sending them some sort of feedback mechanism to the organization, so that the organization has plans for using whatever the person is supposed to be learning at your conference.

Conferee: You get, through your evaluations, feedback. Is there any time that you get feedback that it doesn't affect re-enforcement, either negatively or positively?

McKeachie: No. I think it is -- it would be. In laboratory situations you can separate them out I think. I think in real life situations we always have a need to do things well and so if we get back the notion that this didn't go well, or that this produced -- well, sometimes you might have a situation where there are two things that were equally good, and you find out that you'd do it this way -- it comes out this way. You do it the other way, it comes out a different way. And these are equally good, as far as you're concerned. In this case the feedback might not be particularly re-enforcing; it's informational. But I think in most cases your feedback is going to make you feel "well, this was successful. I did a good job" or "well, maybe I loused up that one but I'll do better next time, "or "maybe I'll get out of the conference business all together."

Well, I guess the other thing I would say about feedback and evaluation is that we have been trying in our own conference to use feedback. The techniques of small group discussion, of meeting with recorders, of talking with people in between etc. and shifting the program -- it is an example of trying to make use of feedback continuously. Generally speaking, you can probably be more adjustive if you're getting feedback more or less continuously than if all the feedback comes at the end after everything is over. So, insofar as you can build-in some opportunities for feedback during a conference, presumably you've got a better chance of increasing motivation and achieving your goals.

Well, now I'd like to do a change of pace and try a technique of role-playing to get at another point, and essentially the point I'm trying to get at here is one which is, I think, familiar to you, but nevertheless I hope will stand out a little more if you've actually gone through something yourself.

Conferee: I have a question. I'm not clear on the difference between the informational feedback and the affective feedback. I'm hazy on this. I don't see that there's a real distinction, that the two are in the same realm the way you described it. Are you saying there is -- that information is actually the feedback? Now if you stop there -- or attendant to all informational feedback is an affective component; that is, you have some feeling about what this information means, that there really are two but both always extend in any feedback situation. This is what -- I don't understand.

McKeachie: Yeah. I guess I wouldn't put in the word, always. I would say usually, or something. That is, that there is the information you get back, and that usually this makes you feel good or bad, or better or worse; but that theoretically it would be possible to get back information which you are neutral about. It didn't make you feel better or worse, but it told you something. I think in drawing 5-inch lines, this is something I don't particularly care whether I can draw a 5-inch line or not, so getting it measured and saying this is too long or too short -- well, I suppose maybe I've got enough pride of accomplishment so it would make me feel better if I hit 5 right on the nose, but I can't really get a big bang out of being better able to draw a 5 inch line.

Conferee: But if I had you captive and I said I'm not letting you out of this room until you can do it?

McKeachie: Then the affective part -- the affective part can vary independently of the information, and you can build in a big affective -- and actually for different people the same information may produce different degrees of affective feedback, and so information which is rewarding to one person may be punishing to another one, or anxiety-producing. And this is one of the reasons I think it's well to distinguish; call it two aspects of the same thing, if you like.

Conferee: Well, this is what I was concerned with. I didn't think it was too clear the way you described it, and I wanted to get that clear in my mind.

McKeachie: Are there other questions?

Well, what I'd like you to do is to group by tables with at least 3 in each group. If you're at a table where there are only 2 people, would you join on to a table where there are three people or more. If you're at the back of the room, group into groups of 3, kind of marking off from the left, I guess -- 1, 2, 3.

Within each table, let's make the person on the left the number 1, the middle person No. 2; the next person No. 3; and I have dittoed up about 20 descriptions of role playing situations. If there are more than 20 groups here, which there may be now, -- I guess I'll keep one and read it for those of you who don't have copies.

What I'm going to ask you to do is for No. 1 to play the role of a director of conferences and institutes. So, if you are No. 1, you're to play the role of the director of conferences and institute, and may I have your attention, please?

No. 1 -- that's the person on the left of the three-man group, you're meeting with the associate assistant dean of the School of Education, who is Man No. 2, the man in the middle. And the two of you are meeting to plan a one-day conference for elementary school principles. And No. 1 (you're the director of conferences) you see principals as being busy people who have difficulty with the new curricula and with all the people who are coming in with expectations that you should do this or that for slow learners or bright learners, or disadvantaged children, etc. You're caught between the demands for discipline and creativity, And, as you see it, the principles have some real problems, They need authoritative help with it. The university has experts in these fields, and that these are principals, who are generally people who have risen where they are because they have a certain sense of authority, a certain sense of order and thus you want a program which will appeal to people who like order and who like a high degree of structure. Now, you think that they'll most appreciate a very well organized sort of format where they will see that the university can organize things well, just as their own schools presumably are well administered.

No. 2, the assistant dean of the School of Education -- you see the principals as also having a lot of problems, but you see them as being sort of lonely oppressed people who don't have anybody they can talk to -- you can't talk to the superintendent because he's your boss and he'll fire you if you admit you've got all these problems; you can't talk to the teachers because you'll be seen as playing favorities; you can't talk to the parents because they're all piling in on you and if you make friends with some parents, other parents are going to feel that you're not giving everyone an equal chance. So, you see this as a situation where the principals need to kind of break loose for once, have a lot of freedom to blow off steam, and not have to worry about whether some superintendent or parent or teacher is going to complain about what they say; so that you see these people as people who have great needs to express themselves freely, without a lot of structure. You'd like a conference in which there's a lot of informality, a lot of flexibility, where they're not caught in the same sort of machine as they are caught in day after day.

No. 3 -- and if we have more than three now in some groups, this should be 3, 4 and 5 -- you're not part of this interaction at all. You're an outsider who are simply watching this role-playing situation and you will be the reporter for the group. What I would like you to do is to watch for the assumptions about learning that these men are making, and for -- particularly to watch for assumptions about personalities of the people in the conference and the needs of the people in the conference (which I've tried to build into the roles) make a difference in the way the conference is planned. And the third thing I'd like for you to watch for is the awareness of these two individuals -- individual differences among principals, and how much the planning can take account of differences between principals. In a sense I've tipped off more than I'd intended to by giving all of the information to everyone, but since I probably don't have enough sheets to go around I don't think this is going to make a big difference.

Now, are there questions about the role playing? I will cut it after a few minutes so that we'll have some time to discuss it; but the notion is that you're sitting here in the principals office. You've just come in; you're ready to start talking about this conference which has to be planned, and you just go ahead an start planning from there.

Conferee: In the principals office or the dean's office?

McKeachie: I don't care -- I mean the dean's office. That's right, the assistant dean of ducation. Excuse me. You're in the educator's office. The other man has just come in and sat down. OK (Confusion of talking in the background)

I became so interested in the discussion I hated to cut it off, but if we're going to make our 11:30 adjournment, I think this is as far as we can go.

Now I pretty much set up two extremes here and assumptions about the personality. What difference did this make in planning as you saw it in the groups you were in or were observing? Did -- were there ways of handling these differences and assumptions about personality. Did you arrive at solutions which you thought were helpful?

Conferee: Well, I observed that the gentlemen came to the conclusion that they'd organize it in discussion groups because they thought discussion would be the best method of promoting the information that they wanted. And then they built into the discussion groups a manner of flexibility and relaxation. The basic idea was to have relaxation in the discussion groups and freedom of thought that these principals could express themselves.

McKeachie: It sounds as if No. 2 won out in that group then.

Conferee: Well, I think they were both in agreement somewhat. The conference planner discussed organization suitable, but they both were generally agreed on the manner.

McKeachie: What happened in some of the other groups?

Conferee: In our group the two gentlemen made the very basic assumption about learning in the fact that they didn't go beyond their -- didn't even get some goals established for the conference from the fact that they had no help from the principal and some direct contact with the needs and I thought that that's as far as they got was that it was the best they could do in this case.

McKeachie: Uh hum. I probably could have written in a role for a principal. I usually like groups of three or so, for something like this, simply because in many set-ups it's hard to get more people together; particularly if you're sitting in rows, three is about as many as you can gather around easily. Maybe I made a mistake in not putting in a principal so that they could have gotten on a little further.

What happened in other groups?

Conferee: Over here we did have a discussion that ended up in pretty much the political situation. (Laughter) There wasthis determination in the assumption that there are slow and fast learners. They also felt that if this thing, this type workshop was taking place the sanction of the superintendent is necessary and that if the sanction comes about probably there will be more interest by the principals attending. If it's just on their own, perhaps they would not take to it so well. However, there was the feeling finally, after some discussion, that the University of Minnesota Extension Center should not go out on this thing. They should involve the principals, guiding and developing this program.

McKeachie: Uh huh. Any other reactions?

Conferee: Our two gentlemen had difficulties in deciding whether the format should be a loose format or a structured format and our director of conferences preferred working with the various others than assistant deans of education. We did finally agree that one program would probably be a combination of structure and loose residential experience follow up. That's as far as we did get. We did come to some conclusions that it might be a good idea for them to schedule another meeting involving the principal's association.

McKeachie: Any others?

Conferee: Our group assumed that these people feel that they're the low people on the totem pole for one thing, as far as the educational structure is concerned, and that this should be a session or a series of sessions with plenty of time to talk, and plenty of time to share problems and responsibilities etc. so that the structure should be quite flexible. They also needed, possibly, the authority of professors of education from the university who might have been their teachers then or previously, who would provide at least a semblance of structure and serve as resource people.

McKeachie: Uh huh. So this was a kind of compromise, yet satisfying both authority needs and needs for support.

Conferee: We had the same.

McKeachie: Other comments?

Conferee: Interestingly enough we had an assistant dean and conference leader in this group. And interestingly enough the conference leader immediately had a person to suggest as an expert to be brought in, without ever confering with the assistant dean, who himself may have had some experts whom he might have suggested. And interestingly he held on that this was a person whom he knew, because he had done so and so. He didn't examine the expertness with the principals themselves so much. I think this is an interesting interaction.

McKeachie: Uh huh.

Conferee: We had the same situation at this table in which there was the assistant dean of education and a director of conferences from the same university, but they were in opposite positions. (Laughter) This made it difficult to react because of their own biases (that they normally play). They felt that the description that you had given here of the conference director was that he believed that the high school principals would learn best what he wanted them to know, and that this was not a fair assumption for conference directors in general. And the assumption about learning on the part of the dean, for this group, was that he felt that if we could find out what they really wanted to know, then we can better serve them, rather than telling them what they should or not know. Also, the assumptions about personalities that they both have was that really we should attempt to build up their moral because they are as Miss Tinker said, the lower person on the totem pole in their attitudes.

McKeachie: One more? Well, I'll just take these three and that'll be it. Back there?

Conferee: I just have a question. I'd be interested in knowing how many people presumably planned a program with the information that was here, as opposed to not planning the program because of the fact that the principals as individuals did not have a representative?

McKeachie: Well, how many did go ahead and decided they couldn't plan it without the principals? Uhm! quite a few.

Conferee: We said we should involve a resource person, or a principal.

Another Conferee: I have a different question. It turns out that in the evaluation of this particular portion of this session -- the question is who did the right thing; the person who followed the instructions and planned the program, or the person who said you couldn't go ahead and plan the program? So which one in terms of evaluation made the right move?

McKeachie: I wouldn't say that either one was necessarily right from my standpoint . I think here, essentially, I'm trying to kind of have you experience some of the things we've been talking about, and both groups may have applied principles that we were talking about.

Conferee: We took the approach that this was the preliminary discussion which we get into every day in our lives. Obviously the content of the program could not be planned unless you had all interested parties involved, but we certainly could agree with the assumption that we had a dean (or assistant dean) of the college of education and a conference coordinator who presumably knows something about conducting conferences, and what their overall movement would be -- we made these assumptions and went ahead and designed a program, without specifying the content. The content has to come in when you have -- you have to bring in the other expertise necessary to develop it.

McKeachie: Well, I won't argue this one. I suspect people -- but I think this is really what I was thinking of when I set it up.

Conferee: This situation here left me with the major impression that it had to do with the technique, the role playing. I happen to know both people very well, and I know that they are so much in agreement as to their philosophy that the situation is difficult in role playing, when you have to take a position that is diametrically opposed to the

McKeachie: And actually this is one of the reasons I wanted to use this. You have raised the question of whether or not you can do anything about motives or attitudes in a three day conference. I think role playing is a fairly powerful technique for doing something in the attitudinal motivational area, particularly in conferences where you have people who have kind of a set position in relation to another group of people, (This might be a group of shop stewards who have a certain position toward management, or a group of teachers who have attitudes toward parents, or parents and teachers or something.) a technique in which you ask people to play the role of the other, the role they're usually working against. I think we have a good deal of evidence that it is one of the best ways to kind of opening up a person to the other person's point of view, and perhaps giving him a little more sympathy for the other side of a situation. It's not perfect, but at least this is one way of working in the attitudinal area.

There is a group over here?

Conferee: This role playing technique is probably one of the easiest and smoothest ways to get people to voice their aggressions without feeling guilty about it. They may have some underlying problems and concerns that cannot be expressed in any other way.

McKeachie: Yes, because as long as you give him a slip of paper (you don't have to pass out papers. I think it is sometimes easier to), but as long as you give him the role so that when he says something nasty it's not him -- it's just the role that he's in -- this gives him a lot more freedom to express things than he had to take responsibility for it as a person. So, it frequently is a way of getting at underlying things which you just couldn't get out in a situation where a person is going to look as if he were really unreasonable, or something.

Conferee: You have a very important variable there in estimating the group, the kind of people you are working with may be the other extreme.

McKeachie: That is where people are more constrained with their role than normally?

Conferee: Yes.

McKeachie: Yeah. This is probably a good group. You are people who are used to working with different kinds of people and probably to some extent adjusting to different situations readily, and not everybody can just start off and play a role and get into it as readily as you may be expected to.

Well, essentially, what I wanted to end up on today was the notion that our assumptions about personality characteristics of students are important in conference planning, that frequently these are assumptions that don't come out into the open, and that as result one of the difficulties in conference planning may be these differences in assumptions, which you kind of keep running against, and yet you can't see why it is the other person doesn't like the plans which seem to be the obviously correct ones to follow.

I would suggest that ordinarily if you can bring these out, this is probably going to enable you to cope with them better, even though you may still not agree as to what the people you're dealing with are like. You may find out ways of finding out which one of you is right, or to what extent you have both types. And I think one of the important points on this personality area is to recognize the wide variety of individual differences you're going to run into in most groups; and thus, usually, the necessity of providing varied experiences which will enable both the person who wants a lot of specific information and the person who wants to express his own ideas, to have a chance to get some satisfactions themselves somewhere in the conference program.

We do have evidence that what one person learns well with another person won't. If you read the article in the thing put out by the Center for the Liberal Education for Adults that I recommended to you, you probably saw some of our experiments, for instance, need for affiliation, and the fact that the teacher who takes a personal interest in his students is particularly effective with students who are high in need for affiliation. They'll work hard for him. They like this. Other students who don't want to get close to the teacher, don't like this kind of teacher, don't work as hard as they would for a teacher who was more impersonal. Well, this is just illustrative, I think, of the general principle that what works for one type of person won't for another, and that thus anything that you can do to kind of assess what the people are, who are coming in to the conference so that you can adapt the major part of your learning experiences to the mode that fits this type of person best; and secondly, any way you can kind of take account of these individual differences by providing opportunities for differing kinds of learning experiences, is probably all to the good.

Lunchtime

BASIC DESIGN
FOR CONFERENCES AND INSTITUTES
TRAINING PROGRAM

SPEAKER: Dr. Frank J. Woerdehoff
Assistant Dean of Education
School of Humanities, Social Science, and Education
Purdue University

CHAIRMAN: James Lahr
Washington University

GENERAL SESSION

9:30A.M., April 26, 1965

Lahr: During the preconference workshop Professor McKeachie from the University of Michigan talked to us about the learning processes as applied to the short term of the conference situation. From these we developed a set of principles which could be used in developing a training program for the C. and I. person.

Professor McKeachie, in his general session on Friday, gave us three major principles of learning, which I have listed on the board. The first one is that learning is always going on. It really never stops, except when the person is sleeping. The second one is that different kinds of learning don't necessarily always go together. Dr. McKeachie went into great detail to explain the differences. The third principle is that learning is facilitated by feedback.

With these three major principles then, we went into the small-group sessions to discuss these as they applied to the C. and I. person, and to bring back to Dr. McKeachie in the evening any questions that we might have, any reactions to this. The discussion with him went on into the next morning, actually, when there was also a brief discussion of personality. Then we went back into our group sessions to develop a series of principles that could be used in developing a training program and that might be used at our universities for in-service training for the new people in the field. We had in mind (1) the full-time student engaged in an adult education curriculum, (2) the employee who has completed his formal education but needs training in C. and I. work, and (3) the experienced C. and I. man who wishes to continue his own training and learning experiences. We came up with six principles.

The first one was commitment. The trainer himself, the person who is doing the training, should have a deep commitment to the field which he's preparing the new man to enter. Therefore the C. and I.

man must continue to upgrade himself and to further his own professional development in order to serve as an able model for this new person to follow.

The second principle is that the trainee must keep abreast of the literature and the research that's going on in the field by developing regular habits for procuring this information. Here motivation really plays an important role and, as trainers, we have to instill this importance. By continuing our own professional development, we show, that the more knowledge one obtains the more interest he has in seeking more. And we must impress upon the trainee that he really doesnot know it all at the beginning; that there's a lot that he has to learn and to acquire before he becomes competent.

The third principle is innovation. The importance and significance of innovation must be stressed with trainees, and how can you do this? Well, Dr. McKeachie suggested that perhaps a system or rewards could be given for innovation. But then, really, how do you train a person in innovation? You might encourage him and give him the security that he needs to feel in the job and in the role that he's playing. In other words, you don't fire him for his first mistake necessarily, though Ed says, you do it after the second mistake. But you at least give him a second try. Or you might try certain innovations yourself to demonstrate creativity on the part of the individual. One way of employing a series of rewards for jobs well done is to publicize the trainees actions and innovations to his colleagues, to the others in the profession, through newsletters and journals. Another is to see that the built-in satisfactions in C. and I. work, are available to the new man. The satisfactions that you get from your job in working with different groups and with different individuals can be shared with the trainee. We all have a tendency, it seems, to give a new man the routine kinds of things to do. We should let him become a part of program planning early.

Fourth was methodology. We must develop in the trainee an understanding of the various methods of teaching adults. And how do you do this? Well, you give the trainee experience in trying the various teaching methods, the various methodology, but you do this after he's had a trial run or two and has proven himself. You don't let him repeat the same kind of activity, the same way, with the same methods. Be innovative, be creative, and reward him.

The fifth point is that the trainee must be given experience in identifying adult needs and developing objectives to meet these needs. The best way, Dr. McKeachie suggested, was to let him sit in on planning sessions where the resource people are present to discuss their needs and their goals and their objectives.

The sixth principle is evaluation. The trainee needs to be able to develop tools of evaluation; and this can be illustrated by example. We have prepared a suggestion form to work with tomorrow which will give you some guide lines on evaluation.

Now, today and tomorrow we're going to take these principles, and attempt to build a curriculum for the training of the new C. and I. person.

Now I'd like to turn the meeting over to Ed who will present our speaker for this morning.

Ed.: Thank you, Jim.

The committee is trying something different this year. We used to have the preconference workshop as sort of an end in itself, and then on Monday, the divisional meetings started a complete new trend of operation. This year we're trying to tie in the four days as closely as we can, and we have been very fortunate in getting two fine resource persons, Dr. McKeachie, and this morning, Dr. Frank Woerderhof. Dr. Woerderhof, as some of you probably know, has been with us for the four days. He was with us here for the preconference workshop, he has worked the entire weekend, and has come up with what I think is going to be a fine presentation.

Dr. Woerderhof has been at Purdue University since 1955. He received his Ph.D. in adult education from the University of Wisconsin, and was the State Supervisor of Adult Education in the State of Wisconsin for seven years. We are extremely fortunate in having such a person, whose interest and whose position as Assistant Dean of Education and Teacher Certification Advisor here at the University puts him in an ideal situation to give us some ideas on the basic principles of curriculum development and how can we, as C. and I. people can combine these with the principles that Dr. McKeachie discussed. We hope to come up with a practical, in-training, pilot program that can be used in the not-too-distant future. We're hoping that we will come up with a program that can be put into operation this fall. So, it gives me great pleasure to present to you, Dr. Frank Woederhof.

Woerderhof: I hope sincerely that I can meet these expectations. I've enjoyed being with you up to this point, and looked forward to this with a great deal of excitement, prior to sitting in with you people, earlier. I have come to the full realization that I'm probably meeting with the most expert program developers and training program developers that exist in America because this has been, and is, your primary job.

The task, as it's been reported, is in three phases. We meet here today to set some foundations really for a discussion that follows on content. And, of course, it would be my opinion that you people best know what the content is for your field. So our first session is to get us ready for discussing the problem of content. And the third aspect of what we're here for is to begin thinking together in order that we may set down a short-range program of training which is a concerted effort by your organization, and perhaps a long-range program as well.

I have spent my time here not only in sessions, but in speaking informally with people at lunch and in the corridors. I think that the very first thing we might well look at is the matter of some problems and issues which I gleaned from these conversations and from the background activity that I engaged in prior to the conference.

One of the problems we are faced with is that there really is no taxonomy for describing this emerging phenomenon of continuing education, as it applies to institutes and conference programs. Cy Houle makes this point in his writings and he goes further to say that there is no substantial theoretical base bringing it under scrutiny and study. Well, this is true, but what area in the field of education has a firmly set theoretical basis, or a taxonomy to guide it? This is the struggling problem of all people preparing for professional positions in education. School administrators are frustrated with this, but we can't spend all our time with our frustrations. Knowing that theory develops slowly and over a long period of time, we've got to realize that conference and institute programs are relatively new. I know you're celebrating your 50th annual meeting, but in the space of time, this is really a short period, so we ought not to get hung up on this, though certainly it is a problem that ought to be tackled and worked on by the scholars in your field.

Another point which I suppose becomes a problem and/or issue is that each institution develops its own pattern, its own scope, its own function of continuing education. Hence we do find that the direction of conferences and institute programs has been rather piecemeal and sporadic in nature. Because it is still in the process of evolution, the field remains relatively unstructured and loosely defined. Consequently I presume there's some lack of symmetry and precision in organization, and sometimes, even its own practitioners do not agree on the definition of its limits. I detected this in some of the small-group sessions. Even though confusion now abounds perhaps, this too ought not to deter us from looking at the problem of training. Even though there are these differences of opinion and pattern there must be some similarities. Exactly what they are I'm not in a position to tell you.

It is true, as I should like to point out here now, that there is a lack of definition of the role of the conference coordinator or the institute coordinator. I'm sure that the master's degree thesis reported in a publication from the Center for Continuing Education of the University of Chicago, has caused a lot of confusion by asking, "Are you an administrator, a facilitator, or an educator?"

Well, I'm not so sure it makes much difference what you call yourselves. I'm sure that in many positions in administration, the dean of education, for example, one is all of these at times. We're all facilitators; we're all educators; we're all administrators. The principal of the high school is the same way. And sometimes our discussions, at least, get hung up on whether we're one thing or another. We're probably all three things; and this ought not to make for any obstacle in our proceeding to develop an established training program for ourselves. The doctor is a facilitator, an educator and administrator. We all have these so-called nuts-and-bolts or chair-moving activities in our jobs. An assistant dean, as I am, is sometimes more a paper shuffler than anything else. So, we ought not to get hung up on how we title ourselves and how we see ourselves. What we are more concerned with in our task is leadership role behavior.

Some people are concerned about C. and I. personnel in that the conference coordinator, at some levels, seems to be a junior executive type of person whose aim is not to be in the post that he's in, but to move up to administration of the total program. Well, is it a junior executive post or not? I really don't know, and I wouldn't presume that this makes much difference.

The entrance requirements may be another issue. The entrance requirements into this occupational field are not clearly identified in terms of academic training and experience. Those who come into the field come from education, and from elsewhere, from business and industry. Again, I don't think this makes a lot of difference, though this is an issue to be faced.

We can get overly concerned about the tenure of employment as conference coordinators, as it appears to be short. I think we're faced with the question, "Is the conference coordinator's role a specialization in its own right, for which definite preparation can be devised?" And this has to be answered. Is there an emerging profession, or occupation, or whatever you want to call it, that has some distinctive characteristics, tasks, functions, that call for special preparation? Or, are there a number of fields of functional specialization within continuing education for which the conference coordinator ought to be trained? We do find them moving-out into other areas of this big broad field of adult education.

As I tried to think about the problems that we're going to be dealing with today, I asked myself: Is a conference coordinator a specialist of things in general, or is he an integrative specialist? Now, the specialist of things in general is the Jack-of-all-trades. And when I use the term, integrative specialist, I'm talking about a person who comes out of a discipline, a particular discipline, who has special training, for instance, in finance. Is the coordinator this kind of person, who has the capacity to learn new fields of application? Obviously there will be some overlap in our concern about what content is viewed as supportive and what is viewed as central. These will be some of the problems.

What we really have here now, I think, is the criterion problem. To what criterion (or criteria) shall one refer in search for optimum allocation of common and specialized training for conference coordinators. What criteria must we use in order that we can determine what common knowledge all of you should have? What supportive knowledge should you have? Now, the criterion problem is a stubborn one, a rather elusive and disturbing one. This problem of getting to content, to the common and specialized content, is very sticky undertaking, I believe.

We're really faced with: Is there a list of identifiable competencies, common to successful performance in all continuing education positions, including the conference coordinator -- an identifiable core of competencies? Are there competencies unique to the conference coordinator, that differ from those required elsewhere in the field of continuing education? These are some of the things that I view as problems and issues, that I encourage you to think about, not only here and now, but long after you leave the conference. I came to view these as some of the problems that are faced in developing a training program as I listened to you and participated with you earlier this past week.

Now, what I've tried to do, to further our thinking about content, is to develop a scheme by which we can view the functions of the whole area of conference and institute development. I may have made some wrong assessments, and I perhaps will have to live with them until we can correct them. Viewing conference coordination as the function that is essential to conducting educationally effective conferences, I tried to develop a point of view about conference coordination in its broader perspectives. I shall attempt here, in perhaps a somewhat superficial manner, to present a structure of the professional tasks of conference coordination. I suggest that our thinking be directed in the channels that conference coordination is to be treated as a special form of leadership behavior. The particular form of leadership behavior must be directed to designing a curriculum model for the training of conference coordinators.

Now, we must always begin with a definition, and this may sound hackneyed and trite, but I suppose it's realistic, on the other hand. For our purposes, let us agree to this definition: Conference coordination is what conference personnel do with faculty within the university and with persons and groups outside the university in organizing, arranging, and conducting educationally effective conferences. If we can accept this definition, we are ready, I think, to lay out some of the dimensions of leadership behavior and to differentiate conference coordination from other functional areas of university extension work.

We now need to give some form and substance to these functional areas in terms of behaviors. What I am trying to do is to steal some concepts from administrative behavior, for I believe they appear to be reasonably fruitful for us in our thinking at the moment. Administrative behavior has been analyzed as tasks, skills and processes; and if we may apply these dimensions to the conference coordinator, we will be looking at three closely related components: tasks, skills and processes.

Obviously, you'll have to forgive me if my analysis of tasks is incomplete and/or even inaccurate. What the field really needs, is some very thorough analytical study of what the tasks and functions of conference coordination are. Here I think is an area of fruitful study and research for this group. So let us see what I come up with and see if this will facilitate our thinking about content, because what I speak about is not content. What I present is the tasks, as I see them from standing off at a distance, which may be applicable.

I have here a model for our thinking about conference and institute functions and I list the three components of our concern: tasks, skills, and processes. I view conference coordination as a task-centered activity which demands certain leadership behavior.

One of the tasks appears to be that of identifying needs. Needs must be satisfied; needs of learners must be satisfied. But I do believe that the conference coordinator, while he has his eye on the psychological problems of meeting the individual people's needs, must also assess the social, economic and technical changes that are taking place in our daily living in order to develop the demanding educational programs which are required. In other words, one of the tasks is to be out ahead of what is actually in demand, by knowing (and assessing) the social, economic and technical change in our society; which is rapid and frightening at times.

A second task is the development of programs, the designing and redesigning of programs with significant educational purposes. This is a pretty pedestrian kind of thing for our thinking at the moment, but our concern is with the content eventually developed to train for the tasks which conference coordination demands. How does one develop programs: What are the essentials of a program? What kinds and types of programs?

A third task is staffing, recruiting. How does one recruit, select and assign appropriate instructional and noninstructional personnel for conference programming? How does the conference coordinator proceed to select staff to man conferences and training programs? How does he relate to nonprofessional personnel, who could make or break the conference (for example, custodial staff who could ruin a conference by not getting something done at the proper time)?

Other tasks are related to facilities, what kind of facilities are required? What kind of materials are necessary to assist faculty members and conferees? It is a problem of selecting and/or developing instructional materials. What kind of content is essential here for training purposes?

The public relations aspect is a task that also needs attention in a training program. The coordinator must develop publicity for conferences, and must interpret conference activity within the university and outside the university. One point of public relations which seems to break down is evident in your pre-conference literature. Some people came here looking for something different than they got. They may well have stayed home had they had the preconference information, because this is not what they were here for. They wanted nuts-and-bolts and you gave them a good review and an extension of educational psychology that applies to adults. So, the public relations is not just getting out brochures but means interpreting conference activities so they are clearly understood. Of course, people do not always read what is written or interpret correctly what they read and hear.

I'm sure there is an area of special services tasks which I do not identify easily, what are special services that the conference coordinator performs to conference planners, to instructors, for the maximum of the university's services?

The next task is a matter of budgeting. The construction and interpretation of a budget seems to be important, as well as some understanding of a fiscal base of operation. I heard one conference coordinator attending the meetings here say, that the conference business is a lucrative business. I'm not certain this is true because I have had some association with our conference bureau and it is anything but lucrative. These fellows struggle and wrestle with the problem of fiscal responsibility and with fiscal policy. In the understanding of a budget, more is involved than simply developing the budget. It's being able to interpret this within the terms and framework of a fiscal policy which is necessary for operation. I'm sure that one of the essential tasks performed, is to keep budget operations fiscally responsible. And so, what content do you need, what content ought to be available to the trainee for an understanding of sound finance in an operation such as a conference and an institute program?

There is also the task of reporting. To prepare, or to work with others in preparing, final reports or proceedings of a conference takes a certain set of skills, if this is in the realm of task behavior of a conference coordinator, certainly some content might well be developed in order that the processes and skills necessary here would be understood and learned by those who work in the area of conference and institute planning. Reporting back is essential. The reporting is an important feedback I think, to conferee's, which is one of the learning principles we have discussed. If you want to facilitate the learning of the conferee this reporting back becomes essential, and maybe an important part of the total, because feedback can be attained through some scheme or system of reporting. And if this is essential as a task, (not necessarily that the coordinator writes the report as he may do this through other people) probably he ought to have some skills and some knowledge in this area.

Orientation, the explaining of conferences and the orienting of conferees to conferences is an important task. It is something more than welcoming the conferees and can make or break a conference. What are the elements of content that one needs for gaining skills in being a good conference person, in the area of being able to orient people to what the here-and-now is and what follows?

We talked a little about evaluating so I had to throw this on the docket, although I presume many conferences do not concern themselves with evaluating. Of course, it's always dangerous to evaluate because in a certain sense you're not only evaluating the other guy, you begin to evaluate yourself and you've got to be ready for the kind of exposure that sometimes is rather difficult to take. But the planning and organizing and implementing activities which deal with evaluating conferences are all important. And what I see, and with a limited view, is that most evaluations have resulted in pencil and paper kinds of things which yield some kinds of results, but there are other techniques of evaluation that ought to be used.

I did note in some of the discussion going around that people spoke somewhat lightly about a conferee saying, "Well, I liked this conference." I presume this may be just about as good as some of the pencil and paper kinds of activities, and if a fellow says, "It stinks." I suppose this is a pretty clear evaluation. But there ought to be some exploration of other evaluation techniques -- all the evaluation techniques -- that would prove to you in some measure that you've gotten what you intended to do off the ground, to some level of successful completion. I think it's not only valuable for you, but a conferee gains something through evaluation. So, it seems to me this would be one of the real important tasks.

Another task is follow-up. There ought to be some means devised where there are follow-ups on conferences, to assess the long-range planning of your activity. These are guidelines for what you may do with this particular group of people as they come again. But more than that, it may give you some guidelines for improved program development, so follow-up is essential . I don't know how many conference and institute programs have a program of follow-up. This seems to me reasonable to be put in the list of tasks.

Once we have accurately identified the tasks of conference coordination, quite obviously this begins to demand content. What content can be devised, created -- not necessarily in terms of courses, because courses don't always lend themselves to satisfying tasks - but how can tasks be used in determining what the content of a training program should be?

I talk about processes there, the processes of planning, organizing leading, controlling and assessing. Processes are rather complex patterns of behavior and they permeate all these tasks. They are processes, so when you deal with content, you must also become concerned with the process of evaluating, the planning of evaluation, the organizing of and the meaning of the evaluating, the controlling and the assessing. These are not unique, however, to the behavior of conference coordinators. They tend to permeate the behavior of all task-oriented people and tend to be employed regardless of the nature of the occupational tasks. But a training program, it would seem to me, ought to take this into consideration.

Now, what am I talking about when I talk about planning? Planning, it seems to me, involves thinking, determining objectives, planning procedures, scheduling, forecasting, programming and the like. When we talk about the organizing process we're concerned with the items, such as resource allocation, establishing relationships, distributing functions, coordinating, delegating, designing programs structures, developing policies ought there not be some accomodation for process, therefore, for relating process? For example, how do you arrive at a decision? What do you do in the decision-making process? How is this carried on?

M

How does an individual behave? The processes of selecting people, of stimulating, initiating, demonstrating, advising, communicating, encouraging, suggesting, innovating, motivating, facilitating, illustrate some of the principles we've dealt with earlier this week.

What are these leading processes that ought to be a part of the behavior of a conference coordinator? The controlling process that you deal with is directing, expiditing, regulating. So what do you build into the training program, and how do you build it in, either in content or methodology, that assists somebody to know and to experience this controlling process?

And what of the assessing process, the judging of performance, the measuring of performance, the researching? These are part and parcel of the behavior of the leadership function of a conference coordinator. These are not necessarily unique, in their broad sense, to conference leadership behavior. It seemed to me that these are factors that all leaders, regardless of the occupational role one performs, must engage in.

What are some of the skills, from my assessment, that tend to be closely related to these processes that I have suggested? These, too, are not necessarily unique to conference coordination behavior. They are basic skills of leadership, and I throw this into my model because I think that this is important when you begin to construct and design a framework of training your own kind. Often they are left out of our consideration, largely because we become so content-orientated that we think in terms of a kind of textbookish approach to training programs. We must not forget that processes, as well as skills, are a major concern.

Now, this classification of skills I have made results largely from a work published in the Harvard Business Review in 1955. This study delineated the skills of an effective administrator, but the skills identified have application here. Three classes of skills were suggested: human, conceptual, and technical. I have not listed them as such but I indicated what some of these may be: analyzing, writing, speaking, listening, observing, diagnosing, synthesizing, visualizing, and empathizing. It is useful to take a different look at these under those three headings. Under the heading of human skills we would find that these kinds of behavior become essential: (1) Empathizing, being able to understand another person, not only intellectually, but with a quality of feeling as when one says he is putting himself in the other guy's boots. (2) Interviewing. This is a human skill. How do you get results in the interview situation? (3) Observing, which means to see something and to know what you see. This is a human skill involved in our dealings with human beings. To be keen observers is a skill our trainees ought to attain. I would not treat this very lightly. We too long have treated listening too lightly and now, in our language arts programs in the public school system, we have begun to insist that listening be an essential part of the program. But here again, observing, being a keen observer is involved. One cannot make any analysis unless he observes keenly. (4) Leading discussions. Here's another human skill, a skill in dealing with people. (5) The skill of being able to reflect feelings, as well as ideas, is a human skill. (6) The ability to participate in discussions is another human skill. One individual said to me that she wished she were not cast in the role of a discussion leader because she felt this was one of the very weak parts of her training. This human skill of getting people to work with you and to discuss with you is one of the skills I think essential.

Secondly are conceptual skills: visualizing, analyzing, diagnosing, synthesizing, criticizing, questioning. These kinds of conceptual skills

I think, are a basic concern when you begin to put together the content for a training program.

The third category, technical skills, are the ability to speak, write, read, listen, outline, demonstrate, graph, sketch, compute, chair a meeting. I haven't stated them all, obviously. We may have to search further into our activities in order to lay out some of these. But in the training of a conference coordinator I wouldn't take these things for granted because I've seen the writing of many administrators and some of the speaking they do. Their ability to listen, their ability to observe, these kinds of technical and/or human and/or conceptual skills are not to be treated lightly, particularly when you bring into your organization people from all disciplines, all training, with the minimal being something like a bachelor's degree.

Well, I have taken you through what I see as a model for at least observing the conference and institute function. I make no claim that I have made a good analysis, but what I do want to claim is that you need to make a good analysis of this C. and I. man you talk about. What is his task and how, then, does this task relate to certain skills, human, conceptual and technical; and to some of the processes employed. I think a good deal of emphasis in training programs must be placed upon processes because no one can know everything, in terms of knowledge,and the processes stand you in good stead when you have to deal with knowledge that is not too familiar to you. It is a problem-solving approach.

I view your activities largely from two points of view. One is that you must evidence some task-oriented leadership behavior. But in the main, you are decision-makers. Decision-making is a key to successful conference operation and institute programs. Basically you become decision-makers. You do not always have complete responsibility for the decisions, but you certainly do lead people in the process of making decisions.

If we intend to develop some in-service training programs for conference coordinators, this kind of analysis of tasks, processes and skills seems to me the starting point, from which some decisions can be made relative to the elements of content, instructional media.

I would like to change gears now in order to suggest some principles that ought to be observed, some principles, and perhaps some criteria that ought to be observed in devising a training program. The first principle is that the program of training must be purposeful, and I don't know how many million times we say this, but I think this is the key to operational success. I don't care what you're planning by way of instruction; this must necessarily head the list. I'll expand this a little by saying that if training objectives are to be considered sound they must meet certain criteria.

The first is what I call the criterion of social adequacy. Here I suggest that purposes must be conceived in terms of the demands of the social circumstance. Now the social circumstance happens to be the particular conference you're planning, let us say. What are the social circumstances? And I am not talking about the society page; I am talking about the circumstances that have brought people to you, or you to them. Training objectives must satify conditions determined by the social circumstances surrounding the tasks of conference coordination.

The second criterion is related to needs. Purposes must somehow lead to the fulfillment of needs. Now, these include both the social and psychological needs of people. But there must also be some functional needs met. What is the function of the conference? The needs criterion must always be of major concern if training is to be purposeful. These are not always the needs we see, but the needs of the conferee as well. I know that what is sometimes called education fails badly because the purposes are not clearly understood.

I walk down the corridors of our great university, and have done this as a secondary school administrator and as an adult educator, and on numerous occasions I have heard students say; "I don't know why the Hell I'm in this class." You see? Somehow the purposes of the course have not become the purposes of the student, or the conferee in this case. We see this kind of breakdown, even in our own meeting here. The purposes we set out in planning the conference are not the purposes of all present. If neither the conferees nor the program itself make some adaptation to bring the purposes in line, there is little reason for some of us to be here. So, the criterion of needs obviously, I think enters strongly into the purposes to which we must direct training.

Then too I think a training program must be purposeful and will be sound if the criterion of adult educational ideals is taken into consideration. In other words, the purposes must be consistent with the ideals of continuing education.

Fourthly, I suggest the criterion of behavioristic interpretation. What I'm saying now is that the purposes are to be so stated and understood that they are capable of reduction to behavioristic terms. The true meaning of an objective is not clear until it is seen in terms of actual human behavior. Now, much instruction in our public schools seems to fail, and teachers seem to fail, because they have not taken the time and opportunity to reduce their purposes to terms of some behavioristic interpretation. The teacher wants to teach good citizenship, and certainly that is a wonderful purpose for instruction. But until you can define how a good citizen behaves, then this purpose has little or no meaning. What this really comes to is a kind of bidimensional scheme for developing purposes. When you truly want to select content in terms of purposes, and you're willing to accept a behavioristic interpretation (psychologists tell us education and learning is a matter of changing behaviors), you can best achieve the desired learning experience by knowing what behavior you want to affect and selecting content which treats this behavior, which effects this kind of behavior.

This model is not new. It was suggested long ago by an expert in curriculum development. But while it may be a hackneyed expression and something that we pass over lightly now because we've heard it so often, I want to emphasize that a training program must be purposeful. One of the principles you ought to observe is a purposefulness that meets the criteria of social adequacy, needs, adult educational ideals, and behavioristic interpretation.

What else then, must we observe as principles? The second principle, I would say, and I've already alluded to it here, is that the content of the training program must be selected with care. First, it must be significant to the field of conferences and institutes; it can't include anything and everything. There must be some perimeters drawn. It must deal with the competencies, skills, and/or processes that a conference coordinator must have or know. Not all is worth knowing, not all can be known, so the scope must be selective. Further, I advocate that the content be selected in terms of behavior, the behavior you want to effect, the behavior you want to change. Using a grid such as this, one could determine on a judgemental basis what behavioristic results content should be directed to. We generally do this backwards. We select content, then hope that it affects, in some manner or form, our behavior, our performance.

Another point is that the subject-matter must stand the test of survival. I heard this in one of the groups yesterday. Whatever we teach must be reasonably factually correct in terms of what is now known. This, I think, was the purpose of having Dr. McKeachie here to bring you up to date on learning theory. The early research on adult learning doesn't hold up as well as it did 15 or 20 years ago; and whatever you select, this content must be factually correct. These things may seem to be obvious, but I think are worthy of our consideration.

One other thing, which I pointed out just a moment ago, that the subject matter must be useful, introduces the utilitarian concept. It ought to be useful in terms of developing the ability to perform occupational tasks. Training must have some utility; not only nice to know for other reasons, but nice to know because it can be used. I'm not speaking primarily of nuts-and-bolts kind of stuff either, you see.

Obviously subject matter must be interesting to the learner. Here the criterion is interest; it must be generally wanted by him; it must help him. Here, again, you have a selection problem. We don't stop with the known interests of our people. If this were the case Madison Avenue would go out of business. But if we look to the advertising and public relations game we know we can create interests on the part of people. And while we must deal with their existing interests, it would seem to me a training program ought to be to create new interests, perhaps that gets to the point of commitment. You see they have this interest here and now, which may be nuts-and-bolts, but we must develop, and can de-develop by creating other interests, a long-term relationship to adult education, this commitment that you spoke about earlier.

Another point is that the subject-matter ought to contribute to the growth and development of the continuation education movement. I think, while we're concerned about the day-to-day problems of a coordinator, his training ought to be so selected that it would contribute to the growth and development of the total movement of adult and/or continuing education. I think I am suggesting that content must in some way be open to accommodate for the dynamics of the adult education movement, but the cutting edge of what is happening in the total field of adult education.

The third major principle I want to set out is that content must in some manner or form be ordered in terms of scope and sequence. How do you sequentially arrange what ought to be known. What is the scope of the content to be devised? The problems of scope and sequence have been bothersome problems, but at some point, it seems to me, those who are concerned with developing any kind of short- and/or long-range training program must consider the principles of scope and sequence. There are other problems involved in this, such as the problem of differences in experience and background. Not all trainees come ready to start at A or Z, you see. They may be at D, E, or F. Thus scope and sequence problems are going to be of major concern. Scope and sequence, again, concerns the interests of people. They may not be, at the moment, interested in starting at A, rather than at D, E, or F. This whole matter of individual differences, which we talk about as we work with people in conferences, operates among us, here today. I'm sure you are wise enough to know that you are equally different one from another, with some real extremes in differences of behavior and ability to perform and to know.

This question of scope and sequence goes back to one of my first points as to purposes. The usefulness of content at a given point in sequence is going to vary. When you order scope and sequence, differing levels of difficulty have to be considered. Thus an important principle in the selection of content is the determination of scope and sequence in relation to the differing backgrounds of the trainees.

After we have had a chance to discuss together some of the things I've talked about, we can begin the task of thinking creatively about the training program you propose to develop for conference coordinators as a professional group.

GENERAL SESSION
3:30 p.m., April 26, 1965

Woerdehoff: If it is agreeable with you, I will talk a little more about the principles and the criteria involved in the development of a training program for conference coordinators, or, generally, in any curriculum-development endeavor. I would like to get some reactions from you as to what has been said, then perhaps we can direct our attention to content. This, however, takes some thoughtful and probing periods of time so I am not sure that we can nail down content in its particulars. What we can do is develop some guidelines for content in the limited time that we have.

Now, our discussion thus far has emphasized that the program has to be purposeful, and that the content has to be selected with care, and ordered in terms of scope and sequence. It must be ordered logically and psychologically. Now, most of the instruction given in a normal classroom, at least at the college level, tends to have a logical organization. Everything seems to classified and ordered. The arrangement comes out of the research background of the disciplines, and you start at A and go to Z. And this is possible because we have built up a whole set of prerequisites in universities You have to take course one before you can take courses two, three and four. Now, I'm sure that content has to be thought of and organized in this manner; but it does not necessarily have to be presented in this manner.

I think that great concern has to be given to the psychological organization. Experiences in any training program, learning experiences, ought to be so ordered and so arranged and re-arranged, actually, that they are provided when there is psychological receptivity. That is, when the participants are ready to grab hold. I don't think you can order a conference or a training program by starting back at A and going to Z.

It can start at any point. As a matter of fact there is a trend, even in higher education, to do away with all these prerequisites for courses, because we do get a lot of bright students in our school who already come with a pretty good orientation background in the knowledge. Now, this would be the case with you people, you see. If you built your training program for your own group, on a wholly logical basis, you might be in the hot water of having students way ahead of A. They may be down to P or Q or something like that, instead of at A. So, a training program really, while it must be observed in its logical organization, in carrying it out some concern must be given to the psychological organization.

My next point would be that a training program must be concerned with knowledge, process, and skills. Now here I begin to repeat myself. To know is important, -- facts, principles, data and all this sort of thing is quite important. But this sometimes misses the goal of altering the behavior of people, and I would say that while we would be concerned with knowledge, we can never overlook the fact that practice is essential in any training program. If you are truly concerned about changing people's behavior, there ought to be some time to practice this behavior that you anticipate. So, it's not all in the knowing. If we see ourselves as task-oriented, people have to do tasks, to behave in a given manner, and you want to put this across. Practice is essential, and when you practice, you alter behavior, which again alters values, and values get us into the active domain that we talked about earlier.

Now, knowledge is important, but it is so vast that you can't know everything even though you've delineated knowledge. How you proceed to use knowledge is another important factor. If we are concerned about knowing, which is in the cognitive domain, we likewise, in a training program, cannot overlook the things that have to be built into the program to affect people, that is, the affective domain. It is practice which helps us with the development of psycho-motor skills, if there are any such things to be involved in your program.

Now, the human being, of course, doesn't only use his head. There are other things functioning. He functions as a total organism and so his feelings and his physical motor skills are also connected with learning. While a training program may basically be a concern with the content of knowing, there must be built into any good program that which affects people.

The training program must also be designed to move from the simple to the complex; the known to the unknown; the balance of the familiar with the unfamiliar. We talked about this in the discussions we had on the psychology of adult learning. But I'm wondering how often this comes to the fore in our thinking when we're developing a program. I think sometimes we make an assumption as to what is familiar that is based on our own knowledge and experience. It is difficult to know the background people will bring to a program and what is new for some will be "old stuff" to others. But any training program will have this difficulty built into it. Where do you start? What are the building blocks? On what foundation do you build to go from the simple to the more complex?

A good training program, in my opinion, should be primarily problem-oriented. In other words, knowledge is important, but how can knowledge be used to solve a problem, or a set of problems? This is what I hear people saying who come to conferences: "How can I take and use this stuff?" In looking at your own problems of training, you have to keep this uppermost in mind, because you are dicision-makers; you are problem-solvers in the main. Any good training program would be concerned with centering on some problem orientation.

Further, the training program must be designed for the continuation of learning. We said just a moment ago that you can't do it all; you can't wrap it all up in a short period of time. I presume even the Ph. D. degree really only opens the door to learning. As a matter of fact, my advisor said, "Now you can go out and learn something. You've got the damned degree; I don't know what you're going to do with it. It's a union card of a sort." But he added, "Now go out and get educated." Even that which looks like something pretty terminal, the end, is but the beginning to becoming a scholar. And so, we can't expect that we can solve everything in any one training program, for many reasons.

First we've got to deal with things we don't know yet exist actually in continuing education. The person in continuing education, if he's going to be in any length of time, has to be dealing with things that he doesn't know already exist, Knowledge is exploding so quickly and so rapidly that you'll be dealing with things that we don't know anything about. But tomorrow we may, you see. And here again is where a fellow ought to get some training in dealing with processes. Subject-matter is important, yes; but we're going to be dealing with subject matter that we don't know anything about. Thus the program must be so designed that it affects people to continue their learning.

The training program you anticipate developing must also make some provision for evaluation; evaluation by those who instruct, yes, but more important by, evaluation by the learner . There ought to be some ways built in so that the learner is evaluating himself. It's just a human condition that people want to know how well they're doing. As a matter of fact the song-writers were well skilled in psychology long ago. In my day we used to dance to "How'm I Doin, Hey, Hey," The song writer suggests that everybody wants to know how well he is doing. Our concern is with education, growth and development. How well am I doing? How well am I learning? Self-evaluation does not necessarily have to be by pencil and paper tests which come up with a grade. There ought to be some further exploration of ways in which you can build into your program activities and experiences through which the learner evaluates himself. How well is he doing? What is he getting? How is he grasping this? It may be that you throw them a problem and say; "All right. See what you can do with it from what we've now given you." This is a way he could begin evaluating, not for the purpose of finding out primarily whether it's right or wrong, but you give him the opportunity to test himself out, and he begins to see himself in relation to whatever norms are established for what he is supposed to be doing. Every good training program must make some provisions for evaluation by the learner. And, by the way, he's doing this anyhow, but it is so much better if good evaluation is built into any curriculum or any training program, very consciously built in.

I think a training program must be narrowly conceived to be functional, yet broadly designed in scope. In this case the scope of the program should relate to the total adult education picture. Because, as I understand it, there is either a decided movement by conference men, up-the-ladder or out-of-the-picture altogether.

Well, these are the points that I suggest for your consideration. There may be other principles, but these, to me, would seem to suggest pretty good guidelines, if you, as an organization, intend to do something about the particulars of the training program. This seems to be rather essential. There is no curriculum for you people in a formal way and so you are almost bound, if you want to establish yourself professionally, to develop some training. I know that there are many emerging occupations in the field of education for which there is no training specified. I asked a vice president of our university; "Where do you get a registrar? I mean, how is he trained?" He said, "Hell, you go out and steal one. You don't worry about his training, You go steal him from some other university." But I don't know how many people are available for stealing; and, of course, you may have some ethics about stealing!

Conferee: Where would you indicate that we actually take a start on this thing if we break down into small groups? We were sitting in a group the other day, and we were rather floundering around trying to come up with some answers, I was surprised that we got as much as we did out of it, though we took an hour and a half to do it. I'm just wondering if you might suggest some starting points, after having given us this overview.

Woerdehoff: Now, this matter of getting into small groups and floundering is probably no different than floundering in the big group. I was going to suggest that if you choose, we might get into four small groups, each choosing several of the principles I've discussed to look at in terms of what kind of content would serve the purposes they indicate. Take a half hour, knowing full well we aren't going to get the full job done. But we may get some broad outlines for some more sophisticated review and thinking about this in the future.

Conferee: With reference to tasks, are there tasks that are unique to C. and I. work rather than to adult education in general?

Woerdehoff: Are there some unique tasks that make you stand out as an occupational group? Are these tasks unique and different than those of someone elsewhere in adult education? I'm not really in a position to answer this. I suggested that you could be a jack-of-all-trades, earlier in my discussion. Are there any unique things? Is there something that sets you off as a particular kind of animal?

Conferee: I suggest that C. and I. affords as much, if not greater opportunity to participate in all the tasks of adult education than other areas. If you are dealing with an on-campus program, for credit, your opportunities with this planning and development of objectives are almost nil; but here you have all the factors which are related to adult education and you have the opportunity to participate in performing these tasks and developing skills. Maybe there are other forms of adult education too where you have this, but at least you have it here. And I think this is one of the reasons why so many people are leaving C. and I. work to go into other phases of adult education, because they've had the chance to practice these tasks and skills and processes.

Woerdehoff: Yes, It's hard to distinguish an adult educator to begin with. I happen to be involved in the Adult Education Association of the United States. It's hard for us to define who an adult educator is, to begin with; and probably gets just about as complex and cloudy as to what his tasks and roles are. Obviously, you can be in adult education as a teacher of adult education. Certainly his tasks would be different than yours.

I am not so certain that your tasks are peculiar and distinct as an occupational group. Maybe they are general. Now, if this is the case, and you have to decide this, this doesn't say you can't have a training program to develop these kinds of skills. I think the leadership factors of any occupation are pretty much the same, but the content comes out of the tasks you perform. This is the way I view it. Now, if your tasks are everybody else's tasks, then you have no identity; then you're nothing. But is there something that makes you a unique person who is a C. and I. man? I'm still not so certain what a C. and I. man is. But is a C. and I. man unique? Does he have unique tasks? Does he have unique content that he has to acquire in order to perform these unique tasks? Or does he need the common knowledge that any administrator might need or possess?

Conferee: I believe that you have a wonderful group of the C. and I. man, because the C. and I. man is all the things you talked about today -- all of them, whereas the generalist in adult education may be in varying degrees some of these things that we've talked about. But the C. and I.

man is a unique fellow who has rubbed shoulders with all of these tasks in varying degrees, and they vary with each group that you get. This ability to sort of swing with the pendulum and get onto this situation and ride herd on it, is one of the peculiarities of the C. and I. man. With all of the things you talked about, do you or do you not think that the C. and I. man is a rather unique individual, if he can master this body of knowledge?

Woerdehoff: I wrestled with this before I came here, and I at first said; "Well, Hell, no! He's just any kind of Joe. He might be a good high school graduate that comes in at a low level as a technician and works in this area." And then I said; "Gee! I couldn't tell these people that anybody can do this job -- that doesn't call for anything important. This won't do me any good, and certainly will get them awfully angry."

If I had a closer working relationship, I might have a more specific answer, you see. I just brush up against you and when they asked me to be with you, I had to find out a little about this. Truthfully we didn't have too much material here. I don't know if there are materials about this. Maybe this is a publication you ought to get out, The C. and I. Man, and women too, -- there are not enough women here because I think they would make excellent conference coordinators. With the labor pool of men growing short, and when I hear some of the wages you pay, maybe you ought to go to women. I think they'd do a good job.

Conferee: I was just going to raise the point, in answer to your other question,that I suspect most of us at one time or other has had difficulty with a good educator who is accustomed to educating at what we call the long-term level. And I think he has been able oftentimes in our colleges and Universities to apply good learning principles and understand motivation and what people are doing. But I think our experience has told us that there is something unique about the conference, or the short-term course. In addition to some of the things you talk about that good educators at all levels might have. Conference work might include an understanding of the element of time, of how to help people learn in what is an unique situation for them, oftentimes in a short, compressed period of time. I think sometimes that the ability to help people who are skilled in particular academic areas to know how to change their presentation, how to work with people with the compressed time element is a unique skill. I think these are a couple of aspects that are somewhat different, and they're the kind of thing that may be unique for you to think about training for.

Woerdehoff: Yes. This makes you unique from the other kind of educator -- in that sense you have a unique function, role, or task to perform.

I would suppose that where you perform (the institution you perform in) either makes you unique or not unique to the total operation too, because some of the dimensions of your performance are set by the way the C. and I. program is developed.

I suppose you have to face the problem from another angle, that anybody can get in. That is, recruits can come from anyplace, actually. And if they bird-dog around with somebody till they get a few gimmicks and devices and techniques, there's nothing too unique about that. The trainee simply does what he's seen happen, and I guess you could train an animal to do this at any level. Now that certainly isn't the C. and I. man, is it?

Conferee: I think the laughter comes from the idea of C. and I. man as a trained animal. We immediately think of the seeing-eye dog, and the analogy is not such a bad one. We're talking about training a good C. and I. man. It means, first, it's a man. Second, if you start thinking of the analogy, of the way a blind man who is led by his dog, the blind man has control of that dog; he holds onto that dog. It guides him,moves him, tells him when to stop, when to go. The dog has been trained to see his way through a variety of difficult situations. The C. and I. man, as facilitator, for example, facilitates a group of people through a particular series of events for a short term, guiding them toward a goal. So, it's not such a crazy analogy. And I think we ought to consider this idea that the C. and I. man has somebody holding onto him, which involves the university, as well as the particular program. Maybe we should get a little more serious about this.

Woerdehoff: I like this analogy. It's all yours, Pete.

Conferee: Well, what I'm thinking about is that underlying our whole discussion has been the assumption that we've got the man -- that we've got the trainee to make into something. He's going to learn how to be better at this thing that we have, by being very much like us, and therefore we have to know more about what _we are_, in developing conferences.

Now, one point that jogged me a little was this matter of sequence of ordered content, of getting the correct scope in sequence and order. You cautioned us that after all, the trainee is a _man_, who comes into the sequence at different levels. The problem, it seems to me is that it is not truly a sequence. You see, it isn't that you've built from A; it is not cumulative or parametal. Maybe the uniqueness that we're looking for is in a uniqueness of the kind of training that we can develop. That is, perhaps we should stop a moment and not think of what usually is a training program, (in terms of some sequence of courses). Maybe we have to see the fact that the C. and I. man is _never_ formed, and we have to provide a continuing education or training for ourselves and for our trainees which in some way allows for constant shifting of feet, a changing of pace, a changing of the kind of tasks that we do. We can't fix the tasks or the content in advance. Probably we need another kind of teaching, or learning situation than we've ever known before in this kind of thing.

You see, you have to steal the registrar. That guy somehow gets formed. You don't make a registrar. Now, it may very well be that you don't quite make a C. and I. man -- that there's very little that you can do to make a C. and I. man, but there's a lot that you can do to make a pretty good man, who can handle C. and I. problems.

Woerdehoff: Well, there is a difference here. Now, what do the rest of you think of Pete's idea here?

Conferee: I rather agree with Pete. I'd like to add one more thing. I think the basic problem we have here is the difference between training and education. You're trying to train this animal to perform a series of tricks which will get a conference started, stopped, and running, and you really want to educate a man to solve some problems by means of the conference method, or an institute method. Before you can do that, you need a pretty knowlegable individual to be able to set forth the problems, and narrow the scope of the problems, and suggest a solution, and do it without being arbitrary. He has to be a diplomat and lead the other people to the solution they may not want when they get the answers. So, I think this is again, (agreeing with Pete) why we're having trouble. We're trying to put a training situation into an educational problem.

Woerdehoff: I probably overstressed the word training. I could have said education, but I said training.

Conferee: We gave you the word, training.

Woerdehoff: That's right. Well, all is not easily resolved, is it?

Conferee: Perhaps I don't agree with myself, because I think there are things we can do. What I'd like to edge into the picture, just this little ingredient that I'm looking for, is the idea of the education of a man. You're not training a dog; but you are doing something to the man. If you get the idea of a better man with certain technical understanding and skills -- a better man will be an excellent C. and I. man. This may be the kind of thing you were describing as one of the objectives

Conferee: Well, Pete, one of the things that got the people in Conference and Institute Division thinking about this problem of training, or education - and I think this is a matter of semantics. One of the things was the fact if we take a good hard look at education in general, there's a certain amount of training going on at all levels for different types of jobs. But we have a tendency to steal from each other, or in fact, away from each other, people in certain occupations. Many of us in here are faced with expanding programs and we don't have the wherewithall to entice away or steal from each other, so we're faced with the problem of bringing a boy along, or a young man or a young woman along, as rapidly as possible to be educated to solve the problems of conducting programs in the C. and I. division, So, this is our problem, and it stems out of this growth explosion that we're having.

Citing just one experience, in three months this year we've had more conferences held and conducted than we've had in any previous full years. There are reasons behind this which I won't go into, but there is a constant explosion going on. As the new centers are developed throughout the country, more and more competent people will be required to operate them. I, for one, do not believe that anyone can come in from off the street and conduct an effective conference or institute.

Conferee: May I ask a question? In your programs, are you looking for a facilitator, or are you actually looking for a coordinator?

Conferee: Well, if we want to keep in the framework of the administrator, educator, facilitator, I think that the majority of us, if we are honest about it, start a young recruit as a facilitator, and bring him along into the administration area, and from the administration area he evolves into the educator role, as I perceive it. This is the way I've actually worked, and I've observed other operations. They seem all to start at about the same level, except when you get a fellow coming in with a Ph.D. in adult education, from one of the institutions that has such programs (as Chicago, Wisconsin, and Syracuse etc.). This man can come in and start at all three levels. But usually he does not operate with any great degree at the facilitator level. He's above this. He wants some sort of staff to back him up in this area. We aren't all fortunate enough to have such large staffs that we can have a crew to do facilitating.

Conferee: I would like then, to ask Peter: Are we talking about principles for the facilitator or the coordinator?

Peter: Well, I think this was precisely what I was trying to get us to move into. You see, we've talked about different kinds of people. Who are we training and for what? In one case, suppose he's got his Ph.D. or maybe he's just got a master's degree in education. He knows probably all the stuff in education. Now, what we may have to help him on is the facilitating; that is, good nuts-and-bolts how -do-you-do-this. Or you may get a guy who understands educational psychology, who has worked with undergraduates, or who has worked in a high school or something like this. We've got to provide the adult dimension there, and maybe the nuts-and-bolts. This is the second kind. Well, you may get a guy out of engineering, in the university and he may have to get the educational background, psychological background, and nuts-and-bolts, plus some other stuff. Now, maybe what we ought to do is go back and define our people again. That's one thing. In other words, we make another chart here that is, the people who should be trained.

The second kind of thing is the opportunities for training -- that is, the conditions under which we're training new personnel.

One thing that I felt Dr. McKeachie tended us toward the other day was the apprenticeship notion. Another kind of possibility is to send new personnel back to a university for a year to fill in some gaps in the formal educational background. What can the University of Chicago do for us? What can we suggest that additional university training, as a full-time student, can do for our people.

Thirdly, what can we accomplish through some short training programs, periodically taking a look at a variety of problems? Maybe we need all three approaches.

Woerdehof: This brings us right up to the work we've set out for tomorrow. I think one of the main problems is that there is no norm for a C. and I. man. Even the definition that I gave doesn't give the norm. Norms are something different than this. But if we knew what the norm was, we'd have something to train for and train toward. But this is lacking. This ought not to be discouraging, because this is really an emerging field. It's youthful; it lacks symmetry and preciseness and design.

I bet if we made an analytical study of any one of the programs here there'd be certainly a lot of commonness to the method of operation and how you go about what you expect from your personnel. But I would suppose there'd be a lot of great differences, and so I think you really have a problem that time may take care of, where you can begin establishing a norm. This is the C. and I. man, you see. This was my problem as an outsider, trying to find out what a C. and I. man really was; and when I asked people, I got some answers. Obviously, they weren't wholly satisfactory. I talked to somebody here, and they said; "Well, this is the C. and I. man," but it isn't. It's a Purdue C. and I. man, you see. And it's not the University of Washington or Washington University C. and I. man. So, one of your problems that somebody's going to have to be looking at in the future is to see what the norms are. What is a normative behavior of a C. and I. man? And then you've got some clues. This is almost a totally unresearched area in education and you can't get the theor you can't develop a taxonomy without doing some of this research.

Now, you don't hurry this. This calls for patience, and you're pioneers in the field. And I wouldn't be a bit discouraged at all, because in the area that I deal with, as a member of the faculty, I'm interested in curriculum theory. Well, there is no such thing as curriculum theory. We're trying to get some broad framework to which to begin to hold and attach parts, but in education -- public education -- there has almost been a lack of theory. This is what the people in administration are doing -- they're trying to look at administration as a behavioral science. They're trying to get a theory for their posture, for their behavior. And what are the norms there? Well, they don't have any norms yet. As long as school administration has been taught, it has been at the nuts-and-bolts stage. Now, they're amassing a group of people, because funds have become available for research, and are beginning to take this sit-back look, you see.

You fellows have been with hoe in hand, cultivating the field. You have got more conferences than you can handle; you've been hoeing like the dickens, and somebody's got to sit back now -- some place, some time, you see -- and take a different kind of look at the field. Somebody's got to sit back and take this look which will produce some kinds of information which tells us what is normative behavior. These are the norms that people should match up with.

Now, we didn't get to what we thought we might be doing. It's nothing serious. Maybe it's best that we didn't get to putting things on the board that might be no good after we take a good hard look at them. We may have been going through an exercise. Maybe what we've done here now is perfectly all right. I think it's been productive.

IMPLEMENTING A LONG-RANGE
TRAINING PROGRAM FOR THE
NEW C. AND I. PERSON

GENERAL SESSION
10:45 a.m., April 27, 1965

Woerdehoff: This morning we are going to move towards some of the broad outlines for training. I am, of course, in the precarious position of being an outsider who probably does not know all the ramifications of your problems, and I take the calculated risk of talking about a kind of institutional organization which is not uniform throughout Conference and Institute work. But, if you'll bear with me, it would seem to me that you may come up with some ideas.

It seems to me at the moment there are two training programs now in existance in your work. One is in-service institutional -- that is, each of your institutions apparently have some kind of in-service training program. This seems to be limited to the nuts-and-bolts.

Now, this, of course, is absolutely essential for the on-going operation of the individual C. and I. program. I think this is basic, essential. But this training is generally on a technician level, to make personnel technically competent in certain kinds of things. And furthermore it has still another limitation, that it reinforces the status quo. People just operate within the framework of what you now do. Their contribution is limited to the pattern of operation. When you re-enforce the status quo, you don't give any entry to new ideas, new concepts, new developments. Obviously, this is what the nuts-and-bolts has to be, and it is an important essential. Every head of a conference has to have this in his repertoire of activities. He has to be concerned about the nuts-and-bolts kinds of activities. However, this type of training is limited, not only to the status quo of the institutional arrangement that you work in, but I think, likewise, it's limited to the capabilities of the man at the top. He is the guy that sets the dimensions. We talk about the image; about having people relate to an image. The quality of the image is dependent on who's at the head.

The second outlet you have at the present time, as I see it, is the training that comes from formal adult education programs. Many of you have gone through these with Ph.D.'s, particularly those who are at the top level of administration. These programs have been devided over the country. Wisconsin has one, Chicago, and others. These programs are designed more especially for the broader field of adult education. Anything that might happen within these related to conference and institute personnel is relatively incidental. As a matter of fact, the individual has to take these broad outlines of training and transfer them to the position he holds, in rank, wherever he happens to be.

So, that's what seems to me to be available at the present time: some in-service training at the technical level, and established academic programs of advanced study in the general field of adult education. Somewhere there is an additional training need that we seek to define.

Now I should like to tell you how I see your personnel, because we've got to begin talking about the people involved in this field. Larry Nelson's graph suggests to me that there are three kinds of personnel operating in Conference and Institute activities; that there are three occupation levels within the framework of conferences. I would regard the person at the top of the heap as the professional. He is most likely to have had some academic training in adult education, or some other formal training in administration. A second level is a para-professional. The man at this level has come into the movement, and has gotten a little more than the nuts-and-bolts kinds of activities. He assists the pro in some subsidiary activities; he's accessory to the total picture. Then you have the technician. So, we have a director; we have coordinators; and we have conference assistants. I think these are the three kinds of people that we ought to be concerned about in the overall training.

I do think for the conference assistant, the nuts-and-bolts is just about what is needed, I understand from what I've heard that some people come in to work on a part-time basis and do the facilitating kind of things. They may be graduate assistants, studying elsewhere on the campus. Their occupational goal may or may not reside within the field of conference training; it may be elsewhere. But this is a means to an end for them and a means to an end for C. and I. For them, nuts-and-bolts training would be satisfactory. There's also the possibility, however, that these people may move up into the para-professional class. Then, of course, they will need some further training. But I think the man of most concern to you is the professional.

I'm sure you realize that the C. and I. movement hardly can hope to perform effectively its panoramic tasks unless it keeps and attracts leaders of the highest order; and I cannot think of anything more significant on any university campus than the conference and institute program. It should be out at the cutting edge of knowledge, you see; and it makes this great contribution, since learning is a lifelong proposition. And so, it seems to me the movements, as a whole, has to perform effectively. In order to do so, it has to not only attract but keep leaders of the highest order. Expert C. and I. personnel are an object of competition from other areas of continuing education. They are stolen quite easily because they come up as shining lights; they possess the flexibility and the leadership ability that others want, who steal them from your movement. The professional C. and I. man is difficult to replace.

Now, in order to keep him from being stolen, it would seem to me that there is some need for challenge, to avoid his becoming complacent in this very thrilling and interesting occupational activity in education. So, to assure that C. and I. personnel will be capable individuals, I suggest that there must be continuous or intermittent opportunities for improvement. These opportunities must be available on the job, somehow, In providing these opportunities, we begin to develop the sense of professional meaning and dignity. I don't know how you feel, in terms of the university structure and umbrella that you live in, but I'm sure you are fighting daily for recognition with the rest of the university, the rest of the faculty. You don't want them to think of you as different from themselves, you see, as a real pro in the total picture of higher education; and this is really what you tend to be in.

I think that the training has to be done, regardless of previous academic preparation, and, as I said a moment ago, a rather cursory examination of the current in-service training programs deals largely with the technical or tactical aspects of the job. While these provisions are important, and I stress that I'm not talking down to these kinds of things this is only a partial fulfillment of the demands for training of practicing C. and I. personnel. Just what would fulfill the mounting in-service requirements of C. and I. personnel is not very obvious. This is a kind of sticky thing, so far as I'm concerned, but it does seem feasible that some facilities for experimentation should be initiated.

Now, my very first recommendation to you as a professional group is that you should proceed as an association or an arm of this NUEA association to develop and organize a committee for professional standards and training. I told you yesterday that it's very difficult to assess the normative behavior to be anticipated by C. and I. personnel. It seems to me this would be one of the tasks of the professional standards and training committee, to give its attention to the question of norms. What is normative behavior? What are the standards? This seems to be loosely defined in your field at the moment. As a matter of fact this does not alarm me, and ought not to alarm you. The thing that would be alarming would be for you to ignore this fact. You are indeed in an emerging thing, an emerging occupation, which I think will grow significantly in its importance as it attaches itself to any other institution, as often the case that C. and I. programs are attached to some other, bigger institutional operation.

I would say that one of the jobs of this committee, in addition to observing the professional standards, the norms that you want to develop is to develop the image of the C. and I. man. Whatever this happens to be, your image as you see it must be explained to the world. You must be able to tell other people in your institution what you are, you see; and this will come. It may take time.

Then I think the committee ought to concern itself with establishing some distinctive means and ends for training C. and I. people. If you have a distinctive operation, then it would seem to me the concern here of the committee would be to establish certain distinctive means and ends, whatever they happen to be.

I think basically there are two things you ought to develop means for. One is that you ought to be developing the broader professional perspective of your activity. And secondly, you ought to be constructing models of leadership behavior. I've tried to show you that there are some possible avenues for model development: the model of the professional, the model of the paraprofessional, the model of the technician.

I think that the over-riding goals and objectives of such a committee ought to be broadly stated as follows:

1. To acquire an articulate conceptual foundation of C. and I. work, by increasing the professional knowledge and the sophisticated comprehension of the role, in continuing education, and in society.

2. To acquire sharper sympathies and greater flexibilities of C. and I. activities.

3. To improve analytical skills, and self-assurance in the process of developing, conducting, arranging, and organizing conferences and institutes.

4. To assist personnel in developing a finer appreciation of the complexities of our culture, and what this means to a modern continuing education program.

So, this is my basic recommendation. I think from this point you will be able to creatively begin developing your own content and your own activity. This is something I can not do with you. This is something you must do with and for yourselves -- the particulars of the content.

I have a second recommendation. I think that you ought to concern yourselves with developing, as a group, a national training laboratory. I think that there is a possibility to do this experimentally. Certainly there must be some funds somewhere in the great spending we do for the improvement of education. It seems to me that you might well develop a national trainings laboratory, which may even have full-time personnel involved in this laboratory center; or it need not be in this sense so structured that you have a full-time staff of any kind. It may be that this could relate to some cooperating university. And here I would suggest that you may be on the campus, but not the property of the university, so that you'd have greater flexibility of your own operation.

This national training laboratory probably ought to be the concern of the pro, because I think most of you here are thinking about the other guy in the business, what you're going yo do for him. I want you to think about what you're going to do for yourself, as the pro in this area, you see. Granted you may have master's or doctor's degrees, I don't think that this means that you stop your professional training. I don't think the doctor, when he finishes his training and becomes a specialist, can considered his training finished. This national training laboratory probably would be a very good thing. You could organize programs to the extent of six weeks where you yourselves would go. I know in the field of educational administration, superintendents are taking sessions as long as six weeks, and they had fears that operations back home would collapse in their absence. This doesn't happen; this really doesn't happen; particularly if you've built in some supportive personnel. You can be gone for as long as six weeks. Maybe it doesn't have to be this long. This is something one would have to determine. I think there's a need for some training for the pro in this field. He doesn't always come directly from adult education. He comes from other things. He can learn. As well as he performs within the dimensions of his own institution, it seems to me that he can profit tremendously.

I think the national training laboratory would concentrate on probably three broad phases, though I don't know precisely what the content ought to be. These are the broader dimensions. One of the areas would be that you might give more attention to administrative leadership. In this area the concepts, principles, findings from human sciences, related to the positions, functions, and roles of C. and I. conference directors or coordinators, ought to be attended to. Here you'd deal with such things as: How do you maintain institutional vitality? How do you maintain institutional vitality of the C. and I. institution? You'd be dealing with human relations. This is an expanding field and our knowledge that is growing tremendously.

You would also deal with the problems under this category of goal-setting. What are the goals? Some activities have some rather narrow goals which may need to be expanded. Do you sit and wait for the post-control people to come to you and ask for a program, or are you energetically looking at the society and culture to see what you ought to be doing? Not only in-coming activity where people come to you, but this going-out, you see, to the society and creating is important. It seems to me your philosophical foundation is one of social reconstruction. You're interested in reconstructing society, making it a better place, no matter what you're dealing with. You deal with the people who are concerned about putting rockets; indeed, you are always reconstructing society if you deal with cultural problems.

Your concern ought to be: How can we make our lives better, our world better, our community better? You're indeed a social reconstructionist, who need not set back and wait for people to come in to see you. You certainly could expand your program if your goals were better determined and you were concerned with a going-out process, with getting out on the cutting edge of knowledge and the cutting edge of change in society.

I think this administrative leadership activity, area, would help you and concern you with the formation and articulation of policy, which I think you might welcome in a training program. I think that the leadership activity, administrative leadership, would deal with the moral and personal growth and development of professional C. and I. personnel. I think the administrative leadership area would involve innovation and educational change. How do you become an innovator? What are the factors of innovation? What is educational change, and how can we become part and parcel of educational change? It will be concerned with interpretation and communications. How, administratively, do you use the tools of communication and interpretation? How can you be socially effective here as a social institution?

Well, I probably haven't delineated everything that might be under this big category that a national training laboratory would be concerned about, but I'm talking about this leadership behavior activity that you would want to give some attention to.

I would say, too, that out of the three areas I'm going to suggest for a national training laboratory, there ought to be concern for developing more written and/or visual and all kinds of materials so that you not only would have these and make a contribution to yourselves through the knowledge in the field, but this would be helpful for a step that I'm going to put in here, on the work with the para-professional. This is the long range -- I'm kind of jumping into the future. I have the privilege of dreaming here, where you may not have, so I'm dreaming. And you may not want to be dreaming, but I'm going to force you to dream a little bit here.

I think the second area would be dealing with comparative administrative structures, organizations and principles. Here the emphasis would be on administration, structural patterns existing within different institutions in adult education; because I think you can learn from the whole field, and bring this to bear upon your own specialized area. You would deal with the organization for goal-setting, planning, research, development, operation, program services, management and evaluation. I heard people talking about the guidance function that you ought to have. Who knows how to proceed to plan a guidance and counseling function? There would be similarities, obviously, to a guidance function in a secondary school, but we might have to be more creative in devising this activity for this special kind of service that you want to give in your conference and institute training program. I think this is not nuts-and-bolts; this is beyond the nuts-and-bolts kinds of things that you do in your institution.

I think that some attention in this administrative structure and organization ought to be given to the interrelationships of units that you deal with. How do C. and I. programs interrelate with all facets of the community of the university? How do they interrelate with the bigger community that we work in? The world, as a matter of fact, is our community here. What is the interrelationship between C. and I. and the rest of the world, so to speak, including the interrelationships that we have within our own campus?

I think this brings in the decision-making processes that you are faced with daily. How do you proceed to make decisions? How do you know when you've made a wise decision? And so, you would be dealing with decision-making and such other things as administrative authority and accountability.

One thing you do get into difficulties with on a big campus is this problem of your authority and your accountability. To whom do you accoun I know some of the small frictions that may arise even locally. We have not thought through, as an institution perhaps, the role of adult C. and I. programs as an institution within an institution. What is this administrative authority, and what are the facets of accountability? Along with this you would be dealing, not only with administrative authority, but such things as clientele, group pressures, social structure, and support. You look at these kinds of things from the areas of the social sciences.

And the third big area I think that you pros would be concerned about would be contemporary culture and society. I've already alluded to this when I said that I think you're basically social reconstructionists. And this is no longer a bad word, I don't think. I think we accept social reconstruction pretty easily, and accommodate it very well in our lives today. Nobody hesitates when somebody finds new vitamin tablets which do something to our lives. We're not concerned about new inventions which change our lives tremendously. Look how the gas stove changed my grandmother's life from the woodburning. We accommodate this reconstruction that takes place in the sciences. We're not so easily convinced in the area of social reconstruction. That's where we wax pretty heatedly because of our old traditions and our old feelings that we've grown inflexible with. But look at all the social invention that has taken place: medicare, etc. etc., etc. We can go down the line. These are social inventions that affect our lives, and you people are social reconstructionists if you tend to work and deal in this area. And so I think that we ought to look, we ought to have some training, as pros, in this matter of what is the contemporary culture in society? What emphasis is being placed on movements, issues, problems, conditions in the various sectors of our society and our culture, as it affects the operation and management of C. and I. activities?

So, this is what I suggest briefly now, going back: You get a committee, a professional standards committee, to think seriously about this proposition of: What are our professional standards and what training do we need? Searching out the normative behavior of the C. and I. professional staff. What is the over-riding philosophy of activities that we're engaged in? What do we need to do by way of developing content? I think you're going to have to hew this out. You cannot take it as it is now in disciplines. I think this has to be cut out of the disciplines, and interrelated, so it'll have to be interdisciplinary. I don't talk about what subjects you ought to teach. Rather, I have tried to list three big areas of concern. Now, there may be more. Remember I'm an outsider, only with a glimpse of your activity. I had not made a penetrating analysis and I think this is what must be done with the professional standards committee.

Now, that is kind of a leap into the future, I admit this; but what can we do on the shorter view? Maybe this can't happen, but you ought to dream. I think it is only dreamers who make things come true, and so I encourage you to become dreamers and visionaries.

Conferee: I challenge your idea that this is dreaming, this that you have just gone through. I firmly have a proposal right now which covers essentially the idea which you so fittingly took into eight different parts. Essentially it is an idea of a Ph.D. program, however, this does not preclude other training possibilities. Essentially what is envisioned is a core curriculum to start out with. Then workshops similar to the one which was held at Chicago, being held at several institutions, one each summer, of three weeks duration instead of six. The philosophy of the institution where the workshop is held, the extension division's philosophy, their actual organization and operation, would be discussed. Some of these other bureaus could be brought in, with this leading toward a doctorate. Of course, this is just in proposal stage.

Woerdehoff: My only suggestion here is that you might want to relate a little closer to this organization for some help, rather than to do it independently. That's why I suggested a professional standing committee. Now, every institution has its own rights and privileges to go out and get its own scheme and design, but I would recommend that at least you get the endorsement of this group. I think this would help your proposal to begin with, because you may have the answers to what I'm beginning to develop. You may have thought more particularly about it, and this is wonderful, I think. This is all to the good to the whole movement of C. and I. I look forward to C. and I. being an integral part of most every university in this country. The field has already mushroomed to where almost every major and minor institution has such programs.

Conferee: Copies of this proposal are available if anybody would be intereste

Woerdehoff: What is your name?

Conferee: Boudreaux, of Louisiana State University.

Woerdehoff: I think you can get money for this. I tell you you can get $300,00 if you come up with a good gimmick, and that's small money these days. A least it gets you off the ground.

If we cannot realize a national training laboratory scheme of the scope and nature that I'm suggesting here (of course, you always have to compromise), you compromise upwards and downwards from this broad notion. (I'm not the only one who is thinking about this, obviously.) I would say that in the immediate future, this committee that I'm recommending that you establish (a real working committee of those who appear to be the thinkers and scholars and creative people in your field) could almost immediately begin to develop a series of, lets say, one-week institutes - something around 30 to 40 hours of activity.

Now, what the content is and where you start I don't know. I'd say you could start any place. You don't have to take this logical organization of subject matter that most full-time, formal programs have. I think here you're concerned with the psychological realities, the most immediate needs that you people see, because you have a degree of expertness here. All I would recommend out of the principles I gave you is that content ought to be problem-centered. Some initial experimentation seems necessary here. Perhaps there will be a flow, backwards and forwards from the immediate short-term to the long-term, professional development activity; and personnel would come from both of these groups. They may even come from the technicians who see that they are in a thrilling, exciting activity in education. They may go up in C. and I. work instead of going out to the world as something else. So, it seems to me that after you once begin to get a cycle of these, you'll begin to structure a program that could be ordered. It might be a kind of certificate program that comes out of your own organization.

For ten years, I was an assistant director of a conference program on this campus which involved, above all things, plumbers and pipe-fitters who saw themselves as teachers, however, for a vocational program, conduct ed throughout the United States. We began with a one-week conference which was intended to be problem-centered. We tried to assess the needs of these people who were part-time teachers (and/or had an aspiration to be part-time teachers) in the adult education movement. We ran about three of these problem-centered institutes and we soon got to the point where we could see that the personnel was changing and the numbers were growing. It was attractive. So we built this on a cyclical program. It could start any place, you see; entrance into it could be. One year, people entered at some point; the second year these people came back and new people came in. This kind of arrangement provided flexibility. My concern was more with the curriculum than administration of this, but it was one of the most thrilling and challenging things that a labor organization does for training its own personnel. I recommend that if they can do it for their people, you ought to be able to do it for your people. And I think this is short term -- this is something that you could get off the ground with some problems and difficulties, but more immediately than this longer one. The longer range, the bigger professional look at the C. and I. program and institution, calls for the proposal to attract money from outside. The shorter range deals with the more pressing problems of personnel development. And I think that this could be done early in the game, in a matter of months. But my strongest recommendation is that it be problem-centered. There must be one overriding problem that emerges from all C. and I. activities. This ought to be the one that is tackled. It ought to be done on a problem-solving basis, where the content provides some opportunity to behave, to act, to use the learning experience.

I think from my analysis you probably have three levels of operation, in terms of personnel: the technician, kind of the assistant coordinator, and the professional who assumes a greater role. I think the long pull, the look to the future, ought to be created by a committee for professional standards and training; and that they, with an institution,could develop a national training laboratory for you people, where you do more than just work with people, but you produce things, and maybe even create research avenues. Here people would begin to get this theoretical foundation that's so badly lacking in many phases of life.

Thirdly, I suggest to you that you get to the practical. This is not nuts-and-bolts. I said that you can get your nuts-and-bolts down here, with a technician, right in your own institutions. I warn you, however, that I'm suggesting these other things because nuts-and-bolts reinforces the status quo: We do it this way. Now you come and follow me at my elbow here; and I want you to learn this as fast possible and I don't want you to make any mistakes. This is the way we do it. Well, this reinforces the institution, only to reproduce itself; and it may be a mongrel, you see. But maybe you want a thoroughbred; and so you've got to do something more than nuts-and-bolts to develop your professional -- or your profession, as I view it. You get to the practical through problem-centered short-term programs that affect behavior. And these can be located anyplace to make them geographically available for people. You may have two or three of these going on. They may not all deal with the same problem. The Western sector of the country may have problem-centered one-week workshop, training school, the Middlewest may have another, and the East Coast, another. I don't know what the geographical arrangement would be, but this is what I see.

I want to tell you that for me this has been an exciting experience. It has caused me to behave differently than I thought. I have tremendously enjoyed the associations, getting to know you, calling Jim by his name, and Tunis, and the rest of you. To me it's been exciting, invigorating. I only hope that I have jarred your thinking. That's about all I could expect to do. It's been a pleasure to be with you.

Chairman: It has indeed been our pleasure, Dr. Woerdehoff. I think you are sending us away with the burning spirit that we heard about on Sunday afternoon. It's been an experience, a wonderful experience for all of us, I know; and I hope we can have further associations with you in the months and the years ahead, as we develop a program.

I want to say, in regards to the professional standards program that I want the executive committee to meet here at 1:30 and this will be one of the things that I want to take up with you at that time -- the establishment of a committee to start work right away on the standards and the principles that Dr. Woerdehoff has outlined here.

A few words before we close our session. As the new chairman I do want to thank all of you for spending your two days, or for some, four days, with us at the preconference workshop and here at the convention itself. I've gotten a lot from it; I hope that you, too, have.

I don't want you to go back to your jobs emptyhanded, because I want some of you to have some assignments to be working on for the group. Al Storey is the new Vice-chairman, program chairman, for the coming year, and he and I want your ideas and also want you to be working for the group as you go back home. So I'm going to establish some working committees here this morning.

1. A new committee that has been suggested, and I think it's an excellent suggestion, is one on awards; an awards committee to establish some kind of criteria for awarding those who have shown innovation during the year in their program, innovation and creativity. I would like this committee to think through certain criteria for awarding a certificate or a scroll for innovation at your institution. John Fraser, I would like to serve as chairman (from Wayne State). Serving with him on that, I would like to appoint Dona Cloud (from the University of Washington); H. O. Brough (University of Iowa); Quint Gessner (University of Michigan).

Incidentally we're going to have a preconference planning committee meeting on October 14th at Ann Arbor, and I would like to have a report from each of the committees at that time to discuss with the board.

A new committee that I think is very important to this group is research. I want this committee to be responsible not only for encouraging research on the part of the individual members, but to attempt to review what's already been done, and to catalog it in some way to make it known to the rest of us, a bibliography of the research that's being done in the field.

I'm appointing Mal Van Deursen chairman of that group (from Washington University). Serving with him: C. W. Bowmaster (from Nebraska); John Buskeg (from Chicago); and Mary Lou O'Donnell (from New Hampshire).

We have a new group, called the Annual Report. Ed Jenusaitis, as the out-going chairman, has promised that this year we will have an annual report because he's going to get it out. And we're going to make this a standard operating procedure, that the outgoing chairman each year will be responsible for preparing and submitting to you (to each of the registrants and members of the division) a report of the year's activities, including much of the material that we have gained from the conference, plus any items of worth that you want to submit to Ed between now and June 1.

Serving with him will be Tunis Dekker, who is going to see that the tapes get transcribed and Roy Andrew (from Purdue).

Let me mention again that we do have a news editor; Jo Anne Ray would be thrilled to have your news items sent regularly to her in care of The NUEA Spectator at the University of Minnesota, Minneapolis. I talked with her yesterday and she said that she will attempt to send out notices to each of you, giving you the deadlines, etc. but don't wait for it. Send your items right away to her and mark them for the attention of the C. and I. section. And let's see if we can't have some good news in that part.

Our executive committee will meet this afternoon, as I said, to establish a professional standards and training committee, and also to select a nominations committee for the forthcoming year.

Now, at this point we have a suggestion form and we want you to take about five minutes to react to the four-day program. Before you leave, will you complete it please; and then as you leave the door, hand it to Ed at this door and to Larry, perhaps, at that door.

Conferee: While we're getting these passed out, I think the group may be interested in the fact that I talked with Harold Reeves, our host institution is Dean for next year, and he has indicated to us that he would be happy to provide meeting space on the New Mexico campus for our preconference workshop, if we so desire. We're to let him know as early as possible.

Chairman: These are air-conditioned rooms, incidentally; and they will provide bus service, or arrange for bus service from the hotel each day to the campus. I think this is a good idea, if we can have our preconference workshop, certainly, on the campus of the University of New Mexico, rather than at the hotel. We can stay at the hotel, but meet there.

Conferee: We've heard varying versions of what you did get out of the conference and we think it's rather important to the committee to get an honest opinion. This is why we're asking you to please fill out this form before you leave, because once you get away from here, they're never sent back. Dr. McKeachie worked with the executive committee in studying this and Al Storey is going to attempt to have a follow-up on this at some future date -- six months, Al? Or somewhere in there? For that reason we're asking you on your form to put down the last 4 digits of your telephone number, your home telephone number, so that when you do get the second form, six months from now, we'd like the same four digits of your telephone number to apoear so that we can make some comparisons as to how and when and where best to evaluate a program such as this. So, if you don't mind doing that on your papers, we'd certainly appreciate it.

1964-65

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